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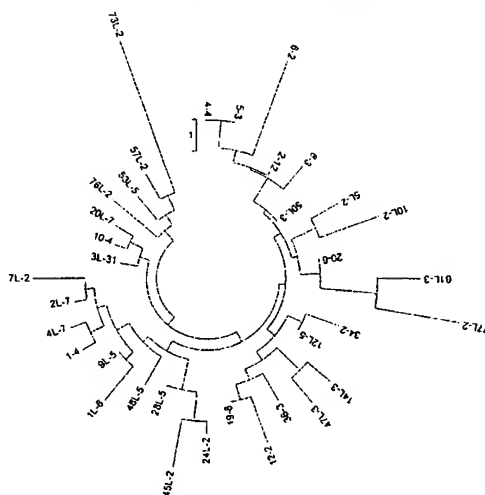
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(54) Title: **ESTROGEN RECEPTOR ALPHA VARIANTS AND METHODS OF DETECTION THEREOF**

The non-singleton haplotype data were fitted to a neighbor-joining tree (L is Liverpool sample):



(57) Abstract: The present invention is based on sequencing genomic DNA from human chromosome 6 and cDNAs to define the genomic structure of estrogen receptor alpha genes and novel polymorphism/haplotypes in the estrogen receptor gene/protein. Such polymorphism/haplotypes can lead to a variety of disorders that are mediated/modulated by a variant estrogen receptor, such as a susceptibility to cancer, osteoporosis, cardiovascular disorder, etc. Based on this sequencing approach, the present invention provides genomic nucleotide sequences, cDNA sequences, amino acid sequences and sequence polymorphism/haplotypes in the ESR-alpha genes, methods of detecting these sequences/polymorphism/haplotypes in a sample, methods of determining a risk of having or developing a disorder mediated by a variant estrogen receptor and methods of screening for compounds used to treat disorders mediated by a variant estrogen receptor.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

ESTROGEN RECEPTOR ALPHA VARIANTS AND METHODS OF DETECTION THEREOF

RELATED APPLICATIONS

5 The present application claims priority to applications U.S. Serial No. 60/183,756, filed February 22, 2000 (Atty. Docket CL000258-PROV); U.S. Serial No. 09/692,414, filed October 20, 2000 (Atty. Docket CL000258); and U.S. Serial No. 09/768,184, filed January 24, 2001 (Atty. Docket CL000258CIP).

10 FIELD OF THE INVENTION

The present invention is in the field of disease detection and therapy. The present invention specifically provides the identification of previously unknown nucleic acid/amino acid polymorphisms within the estrogen receptor alpha gene (ESR-alpha) and the genomic sequence of this gene for use in the development of diagnostics and therapies for diseases and
15 disorders mediated/modulated by the estrogen receptor.

BACKGROUND OF THE INVENTION

Estrogen Receptor

The human estrogen receptor alpha belongs to the nuclear hormone receptor family.
20 Nuclear hormone receptors are a family of hormone-activated transcription factors that can initiate or enhance the transcription of genes containing specific hormone response elements.

The ER protein consists of 595 amino acids with a molecular weight of 66 kDa, 8 transcribed exons, with six different functional domains. Two of those domains are highly conserved in the primary sequence of members of the nuclear hormone receptor superfamily.
25 One of the domains, the DNA binding domain (DBD), contains two zinc fingers that mediate receptor binding to hormone response elements in the promoters of hormone-responsive genes. In the C-terminal region, the hormone-binding domain (HBD) contains two regions of sequence homology with other hormone receptors and gives hormone specificity and selectivity. The human ER-alpha gene is located in chromosome 6q.25.1.

30 Estrogen receptors, like other steroid receptors, are transcription factors that are activated upon binding to steroids (estradiol) or steroid analogs such as tamoxifen. Upon activation the receptors dimerize to form homodimers or heterodimers that bind to estrogen receptor elements (EREs) located in the promoter region of estrogen-activated genes and coordinate transcription by interacting with host co-activators.

Role of Estrogen in Cardiovascular Disease

Heart disease is the leading cause of mortality in women, a fact that is under appreciated by both women and physicians. One in 9 women aged 45-65 have some form of cardiovascular disease and the number increases to 1 in 3 after age 65. Each year, 240,000 U.S. women die from heart disease, and nearly 90,000 die of stroke. Moreover, approximately 44% die within one year of suffering a heart attack, compared with 26% of men (Warren MP and Kulak J Clin Obs Gyn 1998 41(4):976-987).

Estrogens exert a wide range of physiological effects on a large variety of cell types. For example, they regulate cell growth and apoptosis and a myriad of functions related to reproduction. There are two types of estrogen receptors, alpha and beta. Blood vessels and bone contain beta receptors, the liver has alpha receptors, and both alpha and beta receptors are found in the central nervous system. The interaction of these different receptor sites influences the biological effects of estrogen and selective estrogen receptor modulators (SERMs), such as raloxifene. The binding patterns dictate whether an estrogen or a SERM acts as an estrogen agonist or an antagonist (Mendelsohn ME and Karas RH New Engl J Med 1999, 340(23):1801-1811; Grese TA and Dodge JA Curr Pharm Design 1998, 4:71-92). Tissue-specific relationships exist between SERMs and the receptor binding sites. Estrogens also increase high-density lipoprotein cholesterol levels, decrease low-density lipoprotein cholesterol, and decrease plasminogen-activating inhibitor levels (Meisler JG Jour Women's Health 1999, 8(1):51-57). All estrogens require cellular receptors for their expression. In general, estrogen receptors are ligand-inducible transcription factors, which regulate the expression of target genes after hormone binding (Faustini-Fustini et al. Eur J Endocrin 1999, 140:111-129). Estrogen may also have important effects on the vascular wall. Estradiol and progesterone receptors have been identified in arterial endothelial and smooth muscle cells (Campisi D et al. Int J Tiss React 1987, IX(5):393-398). Estrogens act on the wall of the artery to relax vascular smooth muscle and to decrease vascular resistance. The mechanism appears to be through stimulation of endothelial-derived relaxing factors and an endogenous nitrate (Warren MP and Kulak J Clin Obs Gyn 1998 41(4):976-987). The relaxation induced by 17B-estradiol may play an important role in the regulation of coronary tone, which reduces the risk of coronary disease in postmenopausal women. The production of nitric oxide is mediated by the estrogen receptor, because when the receptor is blocked by an antiestrogen agent, nitric oxide is suppressed.

Several studies have shown that estrogen therapy reduces the risk of heart disease by up to 50% (most recently reviewed by Mendelsohn ME and Karas RH New Engl J Med

1999, 340(23):1801-1811; Rich-Edwards JW N Engl J Med, 1995, 332:1758-1765; Gerhard M, Ganz P, Circulation, 1995, 92:5-8; Grodstein F, et al N Engl J Med 1997, 336:1769-75; Chasen-Taber L and Stampfer MJ Ann of Int Med, 1998, 128:467-477; Warren MP and Kulak J Clin Obstet Gyn 1998, 41(4):976-987). Loss of estrogen may be one of the most
5 important factors in the development of cardiovascular disease in women.

While there is no direct evidence that estrogen prevents atherogenesis, considerable epidemiologic evidence exists that suggests that estrogens may have some benefit in reducing cardiovascular disease: (1) In all age groups, women have a lower incidence of cardiovascular disease than do men; (2) women who undergo a premature surgical
10 menopause and do not take estrogens are twice as likely to have cardiovascular disease as age-matched premenopausal controls; (3) postmenopausal women who use estrogens have a significantly lower incidence of cardiovascular disease compared with those who do not; and (4) women with coronary artery disease detected by angiography have a higher survival rate if they are estrogen users.

15 In recent years, reports of favorable effects of estrogen therapy on cardiovascular morbidity and mortality have led to enthusiasm for widespread use of estrogens by postmenopausal women (Meinertz T Herz 1997, 22: 151-157). Guidelines for estrogen therapy issued by the American College of Physicians include the statement "Women who have coronary heart disease are likely to benefit from hormone therapy."

20 More than 30 prospective studies and 13 case controlled studies have examined the effect of estrogen replacement therapy on cardiovascular incidence or prevalence and all cause mortality (Stampfer MJ et al. New Engl J Med 1991, 325:756-62; Grady D et al. Ann Intern Med 1992, 117:1016-37). The majority of these studies showed lower morbidity and mortality from coronary heart disease among users of postmenopausal estrogens than among
25 non-users. Specifically, they have shown that coronary artery disease in estrogen takers is approximately 50% that in women who do not take estrogen. Overall, the bulk of the evidence strongly supports a protective effect of estrogens yielding a relative risk of 0.56 (95% confidence interval 0.50-0.61). However, a "healthy woman selection bias" is present in these studies and potentially may confound these results (estrogen takers have better
30 weight control, exercise more, and smoke less than women who are not prescribed estrogen). Moreover, other biases such as estrogen takers tend to have higher education, higher income, etc., are confounding these epidemiologic studies (Abrams J Clin Cardiol 1998, 21:218-222).

Since the earlier observational trials were not randomized, it is believed by many that as much as 25% of this 50% reduction in risk is due to these various methodological biases

(Barrett-Conner E and Grady D 1998, *Ann Rev Public Health* 19:55-72). Recently, 2 meta-analyses estimated the reduction in coronary heart disease associated with estrogen use to be in the range of 35 to 44 %, respectively (Grodstein F and Stampfer MJ *Prog Cardiol Dis* 1995, 38: 199-210; Barrett-Conner E and Grady D 1998, *Annu Rev Public Health* 19:55-72).

- 5 Recent studies are exploring the issue of opposed vs unopposed estrogen, because of a documented increased risk for uterine cancer in women with an intact uterus who are taking estrogen alone. The new lines of evidence are suggesting that women taking estrogen plus a progestin (usually a medroxyprogesterone acetate) do not receive an equivalent benefit from the cardioprotective effects compared to women taking estrogen alone (Hulley S et al 1998
10 *JAMA* 280:605-613; Abrams J *Clin Cardiol* 1998, 21:218-222).

The loss of estrogen at menopause is associated with a 6% decline in HDL cholesterol levels and a 5% rise in LDL cholesterol levels, which may explain the higher cardiovascular disease rate among postmenopausal women compared with premenopausal women. The lower incidence of cardiovascular disease among postmenopausal women who take estrogen
15 may be explained in part by the resultant 15% to 19% decrease in LDL cholesterol levels and the 16% to 18% increase in HDL cholesterol levels (*JAMA* 1995, 273:199-208). The PEPI (Postmenopausal Estrogen/Progestin Intervention, a randomized, double-blind placebo-controlled trial, showed that HDL cholesterol levels rose significantly more in women assigned to estrogen alone than in women assigned the combined estrogen (*JAMA* 1995,
20 273:199-208). Recent non-human primates studies substantiate these findings (Clarkson TB *Lab An Sci* 1998, 48(6):569-72). Statistical modeling of the effect of estrogen on lipid profiles indicates that 25 – 50% of the apparent cardioprotection due to estrogen is mediated by favorable changes in HDL-cholesterol (Bush TL et al. 1987 *Circulation* 75:1102-9; Gruchow HW et al. 1988 *Am Heart J* 115:954-63).

- 25 Estrogen replacement therapy is not without risk. For years, studies have shown a 3-4-fold increased risk of venous thromboembolism (VTE) in users of oral contraceptives compared to non-users (Weiss G *Am J Obstet Gynecol* 1999 180:S295-301). One study has shown that intrinsic coagulation factors play a significant role in oral contraceptive-associated VTE (Vandenbroucke JP et al. *Lancet* 1994 344:1453-7; Rosing J et al. *Br J Haematol* 1997, 97:233-238). The Factor V Leiden mutation increases risk of VTE 5-10 fold
30 in non users, but 30-fold in third-generation oral contraceptive users. Combined estrogens appear to induce resistance to the body's natural anticoagulation system (APC). Heterozygotes for the Factor V Leiden mutation who take oral contraceptives develop APC resistance as high as that seen in women who are homozygous.

Estrogens increase the risk of endometrial carcinoma approximately 6-fold, an effect that is eliminated, for the most part, by the addition of progestins (Barrett-Conner E and Grady D 1998, *Ann Rev Public Health* 19:55-72). Controversy continues over whether estrogen replacement increases the risk of breast cancer, but some studies indicate risk is elevated by as much as 30%. (Greendale GA et al. *Lancet* 1999, 353:571-80).

A number of prospective randomized studies designed to definitely establish whether estrogen replacement therapy reduces the risk of cardiovascular disease in women and whether it increases the risk of breast cancer, are underway. One recently completed trial (HERS – Heart and Estrogen/progestin Replacement Study) compared continuous combined estrogen plus medroxyprogesterone acetate to placebo in 2700 women with pre-existing coronary disease (Hully S et al. 1998 *JAMA* 280(7):605-13). Compared to controls, the intervention group had significantly more heart disease events in year one of the trial, but significantly fewer events in years 4 and 5 of the trial. Moreover, a significant increase in the rate of thromboembolic events occurred in the early years of the study in women taking hormones. Based on these results, hormone replacement therapy is not recommended for secondary prevention of heart disease.

Two other large, ongoing clinical trials on primary prevention of cardiovascular disease using estrogens are underway. The Women's Health Initiative, due to be completed in 2005 and a U.K. study called WIS-DOM, due to be completed in 2010, should shed new light on the protective effects of estrogen on cardiovascular disease (Meisler JG *Jour Women's Health* 1999, 8(1):51-5).

In summary, ongoing research suggests that estrogen replacement therapy, particularly involving recently formulated designer estrogens or SERMs, may have beneficial effects on the cardiovascular system as well as bone, without the untoward effects on breast and endometrial tissue. Caution still needs to be observed, nonetheless. Women who take estrogens are, on average, better educated, healthier, have higher incomes and have better access to health care. These differences rather than the estrogens may account for much of the lower risk of heart disease.

For postmenopausal women without frank disease, estrogen replacement therapy appears to have a beneficial effect when one considers the magnitude, consistency, and biological plausibility of the data. For women with pre-existing disease, questions remain as to the safety and efficacy of exogenous estrogens as protective agents against cardiovascular disease.

Estrogen and autoimmune diseases

A. Systemic Lupus Erythematosus

There is a widely held view that estrogens play a role in Systemic lupus erythematosus because:

1. Women of child bearing age are nine times more likely to develop systemic lupus erythematosus than men. Prior to pubescence the rate is three fold higher in females, while post menopausal women have an equal chance of developing SLE as aged matched males. Many studies have been done that show that the reason for the differences in the sexes is probably estrogen related (Lahita R.G., 1986: Springer Seminars in Immunopathology 9, 305-314; Krammer, G.M. and Tsokos, G.C. , 1998 Clinical Immunology and Immunopathology 89: 192-195; Rider et al., 1998 Clinical Immunology and Immunopathology 89: 171-180).

Clues to the role of estrogens in SLE came from studies that concluded that oral contraceptives adversely affected the morbidity of this illness (Buton, J.P., 1996 Ann. Med. Interne, 147:259-264; Julkunen, 1991: Scan. J. Rheumatol. 20:427-433).

2. Patients with Klinefelter syndrome (XXY), have been reported with SLE (Stern et al., 1977: Arthritis and Rheumatism 20:18-22).

3. Patients with SLE have anti-estrogen antibodies (Feldman, 1987: Biochem. Biophys. Acta, 145:1342-1348; Bucala et al., 1987: Clin. Exp. Immunol. 67:167-175)

In the past, oral contraceptives have been shown to cause flare ups of SLE, their use was discouraged in women with SLE, while the current thinking is that the lower dose birth control pills are safe for SLE patients (Julkunen HA *Scand J Rheumatol* 1991;20(6):427-33). As well hormone replacement therapy is considered safe for SLE patients (Mok et al., *Scand J Rheumatol* 1998;27(5):342-6; Kreidstein et al., 1997, *J Rheumatol* 1997 Nov;24(11):2149-52)

4. The estrogen antagonist tamoxofin seems to improve the course of the disease (Sthoeger, 1997, *Ann N Y Acad Sci* 1997 Apr 5;815:367-8; Sthoeger, 1994, *J Rheumatol* 1994 Dec;21(12):2231-8).

B. Estrogen, Rheumatoid Arthritis (RA) and osteoarthritis

The literature surrounding the involvement of estrogens in Rheumatoid arthritis is less clear than with osteoarthritis. Epidemiological studies suggests that RA is influenced by female sex hormones, by one study states that the use of oral contraceptives may postpone the onset of RA, but that estrogens alone do not alleviate the symptoms of RA (Bijlsma *Am J Reprod Immunol* 1992 Oct-Dec;28(3-4):231-4). Adjuvant oestrogen treatment does increase

bone mineral density in postmenopausal women with RA, and may protect against osteophoresis which is often a complication of RA (van den Brink: *Ann Rheum Dis* 1993 Apr;52(4):302-5). While the study mentioned above indicated that estrogens did not alleviate RA symptoms, another study concluded that adjuvant estrogen therapy did not even improve the symptoms. One polymorphism has been reported in the estrogen receptor that seems to be associated with the age of onset of RA (Ushiyama *Ann Rheum Dis* 1999 Jan;58(1):7-10)

Osteoarthritis on the other hand is less prevalent in postmenopausal women who take estrogen replacement therapy (ERT) (Felson *Curr Opin Rheumatol* 1998 May;10(3):269-72) suggesting that ERT may be beneficial in preventing osteoarthritis.

C. Estrogen and Osteoporosis

Osteoporosis is a metabolic bone disorder that leads to bone fragility and subsequent risk of fracture. Treatment for postmenopausal women with osteoporosis includes hormone replacement, in particular estrogen. Estrogen has shown to reduce the incidence of bone loss and fractures (Weiss et al., *N Engl J Med* 1980 Nov 20;303(21):1195-8 :Paganini-Hill et al., *Ann Intern Med* 1981 Jul;95(1):28-31: Ettinger et al., *Ann Intern Med* 1985 Mar;102(3):319-24)

Further, polymorphisms in the estrogen receptor have been associated with bone loss in both humans and mice.(Kobayashi *J Bone Miner Res* 1996 Mar;11(3):306-11 : Kurabayashi *Am J Obstet Gynecol* 1999 May;180(5):1115-20; Deng *Hum Genet* 1998 Nov;103(5):576-85)

Estrogens and Cognitive function

Compared with men, women are at greater risk of developing Alzheimer's disease. Several studies show that women who take estrogen after menopause have a lower incidence of Alzheimer's disease. Among women with Alzheimer's, those taking estrogen suffer less severe symptoms and slower mental deterioration. The duration of estrogen use also seems to be important in reducing risk. Women with a history of long-term use (more than 10 years) had the lowest risk. But even women who took estrogen for a short time also benefited.

Estrogen and breast cancer

The major risk factors for the development of breast cancer are sex, age, family history of breast cancer, age of menarche, age at first full-term pregnancy, and age of menopause. All of these factors, with the exception of family history, have been shown to be directly associated with lifetime exposure to estrogen, increased hormone exposure being

associated with increased risk of developing breast cancer. The increased cancer risk is believed to be caused by an estrogen receptor-mediated proliferative response in cells of the mammary epithelium.

Tamoxifen, an estrogen receptor antagonist, has been shown to be an effective agent for both the prevention and treatment of breast cancer. Using immunohistochemical methods, it is possible to classify breast tumors as being estrogen receptor positive or negative, depending upon the amount of estrogen receptor protein expressed in the tissue. Estrogen receptor positive tumors are more likely to respond to treatment with tamoxifen than estrogen receptor negative tumors. Pre-menopausal women are more likely to develop estrogen receptor negative breast cancers than are post-menopausal women.

Mutations altering the structure and function of the estrogen receptor have been described in primary breast tumors or breast cancer cell lines. It is not clear however whether these changes are primary (and involved in the processes leading to carcinogenesis) or secondary (and a consequence of genetic instability in cancer tissues). In addition to these somatic mutations, some studies have pointed to a possible association between inherited DNA sequence changes and the development of breast cancer, but these studies are also controversial.

Further evidence for the role of estrogen receptors in breast cancer comes from the recent finding that the gene BRCA1, which when inherited in a mutant form predisposes to the development of breast cancer, inhibits estrogen receptor signaling.

Estrogens and endometrial cancer

Carcinoma of the endometrium is the most common pelvic malignancy in women, however because in approximately 75% of cases it is confined to the body of the uterus at the time of diagnosis, it can usually be cured by hysterectomy. Unopposed exposure of endometrial cells to estrogens dramatically increases the chance of developing this form of uterine cancer and it is for this reason that hormone replacement therapy consisting solely of estrogen should not be given to women with intact uteri. Cyclical or continuous co-administration of progesterone serves to prevent excessive proliferation of endometrial cells, reducing the risk of endometrial cancer in post-menopausal women receiving estrogen as part of hormone replacement therapy regimens.

The majority of cases of endometrial cancers express estrogen receptor and, in general, estrogen responsive tumors have a favorable prognosis. Acquired (somatic)

mutations have been described in up to 8.5% of cases, however the role of these mutations in the development and progression of endometrial cancer is uncertain at present.

Although it remains somewhat controversial, studies suggest that use of tamoxifen may increase the chance of developing endometrial cancer. This may be because, in addition to its role in estrogen receptor blockade, tamoxifen has partial receptor agonist activity and results in low-grade induction of estrogen responsive genes that induce endometrial proliferation.

Given the involvement of the estrogen receptor in mediating/modulating various disorders, it is critical to identify sequence polymorphisms in the estrogen receptor and to correlate these with disease states, therapeutic effectiveness and the like. The present invention advances the art by providing a variety of previously unidentified polymorphisms in the ESR-alpha protein.

SNPs

The genomes of all organisms undergo spontaneous mutation in the course of their continuing evolution, generating variant forms of progenitor sequences (Gusella, Ann. Rev. Biochem. 55, 831-854 (1986)). The variant form may confer an evolutionary advantage or disadvantage relative to a progenitor form or may be neutral. In some instances, a variant form confers a lethal disadvantage and is not transmitted to subsequent generations of the organism. In other instances, a variant form confers an evolutionary advantage to the species and is eventually incorporated into the DNA of many or most members of the species and effectively becomes the progenitor form. Additionally, the effect of a variant form may be both beneficial and detrimental, depending on the circumstances. For example, a heterozygous sickle cell mutation confers resistance to malaria, but a homozygous sickle cell mutation is usually lethal. In many instances, both progenitor and variant form(s) survive and co-exist in a species population. The coexistence of multiple forms of a sequence gives rise to polymorphisms, such as SNPs.

The reference allelic form is arbitrarily designated and may be, for example, the most abundant form in a population, or the first allelic form to be identified, and other allelic forms are designated as alternative, variant or polymorphic alleles. The allelic form occurring most frequently in a selected population is sometimes referred to as the "wild type" form.

Approximately 90% of all polymorphisms in the human genome are single nucleotide polymorphisms (SNPs). SNPs are single base pair positions in DNA at which different alleles, or alternative nucleotides, exist in some population. The SNP position, or SNP site, is usually preceded by and followed by highly conserved sequences of the allele (e.g.,

sequences that vary in less than 1/100 or 1/1000 members of the populations). An individual may be homozygous or heterozygous for an allele at each SNP position. As defined by the present invention, the least frequent allele at a SNP position can have any frequency that is less than the frequency of the more frequent allele, including a frequency of less than 1% in a population. A SNP can, in some instances, be referred to as a "cSNP" to denote that the nucleotide sequence containing the SNP is an amino acid coding sequence.

A SNP may arise due to a substitution of one nucleotide for another at the polymorphic site. Substitutions can be transitions or transversions. A transition is the replacement of one purine nucleotide by another purine nucleotide, or one pyrimidine by another pyrimidine. A transversion is the replacement of a purine by a pyrimidine, or vice versa. A SNP may also be a single base insertion/deletion variant (referred to as "indels"). A substitution that changes a codon coding for one amino acid to a codon coding for a different amino acid is referred to as a non-synonymous codon change, or missense mutation. A synonymous codon change, or silent mutation, is one that does not result in a change of amino acid due to the degeneracy of the genetic code. A nonsense mutation is a type of non-synonymous codon change that results in the formation of a stop codon, thereby leading to premature termination of a polypeptide chain and a defective protein.

SNPs, in principle, can be bi-, tri-, or tetra- allelic. However, tri- and tetra-allelic polymorphisms are extremely rare, almost to the point of non-existence (Brookes, Gene 234 (1999) 177-186). For this reason, SNPs are often referred to as "bi-allelic markers", or "di-allelic markers".

Causative SNPs are those SNPs that produce alterations in gene expression or in the expression or function of a gene product, and therefore are most predictive of a possible clinical phenotype. One such class includes SNPs falling within regions of genes encoding a polypeptide product, i.e. cSNPs. These SNPs may result in an alteration of the amino acid sequence of the polypeptide product (i.e., non-synonymous codon changes) and give rise to the expression of a defective or other variant protein. Furthermore, in the case of nonsense mutations, a SNP may lead to premature termination of a polypeptide product. Such variant products can result in a pathological condition, e.g., genetic disease. Examples of genes in which a polymorphism within a coding sequence gives rise to genetic disease include sickle cell anemia and cystic fibrosis. Causative SNPs do not necessarily have to occur in coding regions; causative SNPs can occur in any region that can ultimately affect the expression and/or activity of the protein encoded by the nucleic acid. Such gene areas include those involved in transcription, such as SNPs in promoter regions, in gene areas involved in

transcript processing, such as SNPs at intron-exon boundaries that may cause defective splicing, or SNPs in mRNA processing signal sequences such as polyadenylation signal regions. For example, a SNP may inhibit splicing of an intron and result in mRNA containing a premature stop codon, leading to a defective protein. Consequently, SNPs in regulatory
5 regions can have substantial phenotypic impact.

Some SNPs that are not causative SNPs nevertheless are in close association with, and therefore segregate with, a disease-causing sequence. In this situation, the presence of the SNP correlates with the presence of, or susceptibility to, the disease. These SNPs are invaluable for diagnostics and disease susceptibility screening.

10 Clinical trials have shown that patient response to treatment with pharmaceuticals is often heterogeneous. Thus there is a need for improved approaches to pharmaceutical agent design and therapy. SNPs can be used to help identify patients most suited to therapy with particular pharmaceutical agents (this is often termed "pharmacogenomics").

Pharmacogenomics can also be used in pharmaceutical research to assist the drug selection
15 process. (Linder et al. (1997), Clinical Chemistry, 43, 254; Marshall (1997), Nature Biotechnology, 15, 1249; International Patent Application WO 97/40462, Spectra Biomedical; and Schafer et al. (1998), Nature Biotechnology, 16, 3.).

Population Studies

20 Population Genetics is the study of how Mendel's laws and other genetic principles apply to entire populations. Such a study is essential to a proper understanding of evolution because, fundamentally, evolution is the result of progressive change in the genetic composition of a population. Population genetics thus seeks to understand and to predict the effects of such genetic phenomena as segregation, recombination, and mutation; at the same
25 time, population genetics must take into account such ecological and evolutionary factors as population size, patterns of mating, geographic distribution of individuals, migration and natural selection.

Ideally, one would wish to know how to describe the types and frequencies of genes in a population, to explain how the population's genetic composition came to be the way it is,
30 and to predict how the population would change as a result of natural selection or as a result of artificial selection.

In order to explain many of those issues it is important to understand the existing relation between loci denominated: Linkage.

Linkage is the coinheritance of two or more nonallelic genes because their loci are in close proximity on the same chromosome, such that after meiosis they remain associated more often than the 50% expected for unlinked genes. During meiosis, there is a physical crossing over, it is clear that during the production of germ cells there is a physical exchange of maternal and paternal genetic contributions between individual chromatids. This exchange necessarily separates genes in chromosomal regions that were contiguous in each parent and, by mixing them with retained linear order, results in "recombinants". The process of forming recombinants through meiotic crossing-over is an essential feature in the reassortment of genetic traits and is central to understanding the transmission of genes.

Recombination generally occurs between large segments of DNA. This means that contiguous stretches of DNA and genes are likely to be moved together. Conversely, regions of the DNA that are far apart on a given chromosome are likely to become separated during the process of crossing-over.

It is possible to use molecular markers to clarify the recombination events that take place during meiosis. Some markers as (CA)_n repeats of different lengths are dispersed throughout human DNA and there is little selective pressure in their lengths are used as position markers and regional identifying characters along chromosomes. Those markers can be used to distinguish paternally derived from maternally derived gene regions.

Other markers are Single Nucleotide Polymorphism (SNP), those are biallelic markers, also used to analyzed the transmission of those markers to offspring.

The pattern of a set of markers along a chromosome is referred to as a "Haplotype". Therefore sets of alleles on the same small chromosomal segment tend to be transmitted as a block through a pedigree. By analyzing the haplotypes in a series of offspring of parents whose haplotypes are known, it is possible to establish which parental segment of which chromosome was transmitted to which child. When not broken up by recombinations, haplotypes can be treated for mapping purposes as alleles at a single highly polymorphic locus.

The existence of a preferential occurrence of a disease gene in association with specific alleles of linked markers is called "Linkage Disequilibrium"(LD). This sort of disequilibrium generally implies that most of the disease chromosomes carry the same mutation and the markers being tested are quite close to the disease gene. For example, there is considerable linkage disequilibrium across the entire HLA locus. The A3 allele is in LD with the B7 and B14 alleles, and as a result B7 and B14 are also highly associated with hemochromatosis. Thus, HLA typing alone can significantly alter the estimate of risk for

hemochromatosis, even if other family members are not available for formal linkage analysis. As a result, using a combination of several markers surrounding the presumptive location of the gene, a haplotype can be determined for affected and unaffected family members.

5 SNP-Based Association Analysis and Linkage Disequilibrium Mapping

SNPs are useful in association studies for identifying particular SNPs, or other polymorphisms, associated with pathological conditions, such as breast cancer. Association studies may be conducted within the general population and are not limited to studies performed on related individuals in affected families (linkage studies). An association study
10 using SNPs involves determining the frequency of the SNP allele in many patients with the disorder of interest, such as breast cancer, as well as controls of similar age and race. The appropriate selection of patients and controls is critical to the success of SNP association studies. Therefore, a pool of individuals with well-characterized phenotypes is extremely desirable. For example, blood pressure and heart rate can be correlated with SNP patterns in
15 hypertensive individuals in whom these physiological parameters are known in order to find associations between particular SNP genotypes and known phenotypes. Significant associations between particular SNPs or SNP haplotypes and phenotypic characteristics can be determined by standard statistical methods. Association analysis can either be direct or LD based. In direct association analysis, causative SNPs are tested that are candidates for the
20 pathogenic sequence itself.

In LD based SNP association analysis, random SNPs are tested over a large genomic region, possibly the entire genome, in order to find a SNP in LD with the true pathogenic sequence or pathogenic SNP. For this approach, high density SNP maps are required in order for random SNPs to be located close enough to an unknown pathogenic locus to be in linkage
25 disequilibrium with that locus in order to detect an association. SNPs tend to occur with great frequency and are spaced uniformly throughout the genome. The frequency and uniformity of SNPs means that there is a greater probability, compared with other types of polymorphisms such as tandem repeat polymorphisms, that a SNP will be found in close proximity to a genetic locus of interest. SNPs are also mutationally more stable than tandem repeat
30 polymorphisms, such as VNTRs. LD-based association studies are capable of finding a disease susceptibility gene without any a priori assumptions about what or where the gene is.

Currently, however, it is not feasible to do SNP association studies over the entire human genome, therefore candidate genes associated with breast cancer are targeted for SNP identification and association analysis. The candidate gene approach uses a priori knowledge

of disease pathogenesis to identify genes that are hypothesized to directly influence development of the disease. The candidate gene approach may focus on a gene that is directly targeted by a drug used to treat the disorder. To discover SNPs associated with an increased susceptibility to breast cancer, candidate genes can be selected from systems physiologically implicated in the disease pathway. SNPs found in these genes are then tested for statistical association with disease in individuals who have the disease compared with appropriate controls. The candidate gene approach has the advantages of drastically reducing the number of candidate SNPs, and the number of individuals, that need to be typed, compared with LD-based association studies of random SNPs over large areas of, or complete, genomes. Furthermore, in the candidate gene approach, no assumptions are made about the extent of LD over any particular area of the genome.

Combined with the use of a high density map of appropriately spaced, sufficiently informative SNP markers, association studies, including linkage disequilibrium-based genome wide association studies, will enable the identification of most genes involved in complex disorders, such as breast cancer. This will enhance the selection of candidate genes most likely to contain causative SNPs associated with a particular disease. All of the SNPs disclosed by the present invention can be employed as part of genome-wide association studies or as part of candidate gene association studies.

The present invention advances the state of the art and provides commercially useful embodiments by providing previously unidentified SNPs in the estrogen receptor genes.

SUMMARY OF THE INVENTION

The present invention is based on sequencing genomic DNA from human chromosome 6 and cDNAs to define the genomic structure of estrogen receptor alpha genes, novel polymorphisms in the estrogen receptor gene/protein and previously unknown haplotypes. Such polymorphisms/haplotypes can lead to a variety of disorders that are mediated/modulated by a variant estrogen receptor, such as a susceptibility to cancer, osteoporosis, cardiovascular disorders, etc. Based on this sequencing approach, the present invention provides genomic nucleotide sequences, cDNA sequences, amino acid sequences, sequence polymorphisms in the ESR-alpha gene, haplotypes of these polymorphisms, methods of detecting these sequences/polymorphisms in a sample, methods of determining a risk of having or developing a disorder mediated by a variant estrogen receptor and methods of screening for compounds used to treat disorders mediated by a variant estrogen receptor.

DESCRIPTION OF THE FIGURES

Figure 1. Complete genomic sequence of the estrogen receptor alpha gene.

Figure 2. Sequence polymorphisms found in the ESR-alpha genomic DNA (nucleotide position is based on the sequence provided in Figure 1.)

- 5 a) SNPs in Liverpool clinical tissue samples.
- b) SNPs in Coriell Diversity panels.
- c) PCR primers.
- d) Sequencing primers.

Figure 3. Amino acid sequence of the estrogen receptor alpha protein.

10 **Figure 4.** Estrogen Receptor Haplotypes (See Haplotype Section).

Figure 5. The domain structure of the ESR1 protein and the positions of the SNPs disclosed herein.

Figure 6. The distribution and frequency of many of the SNPs of the present invention.

15 **Figure 7.** A graphic representation of the human ESR1 locus.

(a) complete structure of the human estrogen receptor alpha (ER α). Exons are represented by filled boxes and introns by horizontal lines.

(b) Order and names of contigs used to complete the genomic sequence. GA numbers represent Celera contig numbers. Research Genetics BAC clones are represented by standard plate and well numbering.

20 **Figure 8.** ESR-alpha SNPs: a) in Coriell Samples, b) in Liverpool Samples (T= tumor sample, B= blood sample).

Figure 9. ESR-alpha exons with SNPs. (see Figure 2 for "N", "C", "T", "A", "S" representations). Underlined sequences indicate the primer sequences.

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DETAILED DESCRIPTION OF THE INVENTION

General Description

The present invention is based on sequencing genomic DNA from human chromosome 6 and cDNAs to define the genomic structure of estrogen receptor alpha genes and novel polymorphisms and haplotypes in the estrogen receptor gene/protein. Such polymorphisms/haplotypes can lead to a variety of disorders that are mediated/modulated by a variant estrogen receptor, such as a susceptibility to cancer, osteoporosis, cardiovascular disorders, etc. Based on this sequencing approach, the present invention provides genomic

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nucleotide sequences, cDNA sequences, amino acid sequences and sequence polymorphisms/haplotypes in the ESR-alpha gene, methods of detecting these sequences/polymorphisms/haplotypes in a sample, methods of determining a risk of having or developing a disorder mediated by a variant estrogen receptor and methods of screening for compounds used to treat disorders mediated by a variant estrogen receptor.

Isolated SNP-Containing Nucleic Acid Molecules

The present invention provides isolated nucleic acid molecules that contain one or more SNPs disclosed by the present invention. The present invention further provides isolated nucleic acid molecules that encode the variant protein. Such nucleic acid molecules will consist of, consist essentially of, or comprise one or more SNPs of the present invention. The nucleic acid molecule can have additional nucleic acid residues, such as nucleic acid residues that are naturally associated with it or heterologous nucleotide sequences.

As used herein, an "isolated" SNP-containing nucleic acid molecule is one that contains a SNP of the present invention and is separated from other nucleic acid present in the natural source of the nucleic acid. Generally, the isolated SNP-containing nucleic acid, as used herein, will be comprised of one or more SNP positions disclosed by the present invention with flanking nucleotide sequence on either side of the SNP positions. Preferably the flanking sequence is up to about 300 bases, 100 bases, 50 bases, 30 bases, 15 bases, 10 bases, or 4 bases on either side of a SNP position for detection reagents or as long as the entire protein encoding sequence if it is to be used to produce a protein containing the coding variants disclosed in Figures. The important point is that the nucleic acid is isolated from remote and unimportant flanking sequences and is of appropriate length such that it can be subjected to the specific manipulations or uses described herein such as recombinant expression, preparation of probes and primers for the SNP position, and other uses specific to the SNP-containing nucleic acid sequences.

Moreover, an "isolated" nucleic acid molecule, such as a cDNA molecule containing a SNP of the present invention, can be substantially free of other cellular material, or culture medium when produced by recombinant techniques, or chemical precursors or other chemicals when chemically synthesized. However, the nucleic acid molecule can be fused to other coding or regulatory sequences and still be considered isolated. For example, recombinant DNA molecules contained in a vector are considered isolated. Further examples of isolated DNA molecules include recombinant DNA molecules maintained in heterologous host cells or purified (partially or substantially) DNA molecules in solution. Isolated RNA molecules include *in vivo* or *in vitro* RNA transcripts of the isolated SNP-containing DNA molecules of the present

invention. Isolated nucleic acid molecules according to the present invention further include such molecules produced synthetically.

Isolated SNP-containing nucleic acid molecules can be in the form of RNA, such as mRNA, or in the form DNA, including cDNA and genomic DNA obtained by cloning or produced by chemical synthetic techniques or by a combination thereof. The nucleic acid, especially DNA, can be double-stranded or single-stranded. Single-stranded nucleic acid can be the coding strand (sense strand) or the non-coding strand (anti-sense strand).

The present invention further provides related nucleic acid molecules that hybridize under stringent conditions to the nucleic acid molecules disclosed herein. As used herein, the term "hybridizes under stringent conditions" is intended to describe conditions for hybridization and washing under which nucleotide sequences encoding a peptide at least 60-70% homologous to each other typically remain hybridized to each other. The conditions can be such that sequences at least about 60%, at least about 70%, or at least about 80%, or at least about 90% or more homologous to each other typically remain hybridized to each other. Such stringent conditions are known to those skilled in the art and can be found in *Current Protocols in Molecular Biology*, John Wiley & Sons, N.Y. (1989), 6.3.1-6.3.6. One example of stringent hybridization conditions are hybridization in 6X sodium chloride/sodium citrate (SSC) at about 45 °C, followed by one or more washes in 0.2 X SSC, 0.1% SDS at 50-65 °C. Examples of moderate to low stringency hybridization conditions are well known in the art.

Specific Embodiments

Peptide Molecules

The present invention provides nucleic acid sequences that encode variants of the estrogen receptor. These variant molecule/sequences will be referred to herein as the estrogen receptor variants of the present invention, the estrogen receptor proteins of the present invention, or peptides/proteins of the present invention.

The present invention provides isolated estrogen receptor protein molecules that consist of, consist essentially of or are comprised of the amino acid sequences of the estrogen receptor variant proteins disclosed herein.

As used herein, a protein or peptide is said to be "isolated" or "purified" when it is substantially free of cellular material or free of chemical precursors or other chemicals. The peptides of the present invention can be purified to homogeneity or other degrees of purity. The level of purification will be based on the intended use. The critical feature is that the preparation

allows for the desired function of the peptide, even if in the presence of considerable amounts of other components.

In some uses, "substantially free of cellular material" includes preparations of the peptide having less than about 30% (by dry weight) other proteins (i.e., contaminating protein), less than
5 about 20% other proteins, less than about 10% other proteins, or less than about 5% other proteins. When the peptide is recombinantly produced, it can also be substantially free of culture medium, i.e., culture medium represents less than about 20% of the volume of the protein preparation.

The language "substantially free of chemical precursors or other chemicals" includes
10 preparations of the peptide in which it is separated from chemical precursors or other chemicals that are involved in its synthesis. In one embodiment, the language "substantially free of chemical precursors or other chemicals" includes preparations of the estrogen receptor protein having less than about 30% (by dry weight) chemical precursors or other chemicals, less than
about 20% chemical precursors or other chemicals, less than about 10% chemical precursors or
15 other chemicals, or less than about 5% chemical precursors or other chemicals.

The isolated estrogen receptor proteins can be purified from cells that naturally express it, purified from cells that have been altered to express it (recombinant), or synthesized using known protein synthesis methods. For example, a nucleic acid molecule encoding the estrogen receptor protein is cloned into an expression vector, the expression vector introduced into a host
20 cell and the protein expressed in the host cell. The protein can then be isolated from the cells by an appropriate purification scheme using standard protein purification techniques. Many of these techniques are described in detail below.

Accordingly, the present invention provides proteins that consist of the amino acid sequences summarized in Figure 1, including one or more of the sequence polymorphisms
25 provided in Figure 2. A protein consists of an amino acid sequence when the amino acid sequence is the final amino acid sequence of the protein.

The present invention further provides proteins that consist essentially of the amino acid sequences summarized in Figure 1, including one or more of the sequence polymorphisms provided in Figure 2. A protein consists essentially of an amino acid sequence when such an
30 amino acid sequence is present with only a few additional amino acid residues in the final protein.

The present invention further provides a protein that is comprised of the amino acid sequences summarized in Figure 1, including one or more of the sequence polymorphisms provided in Figure 2. A protein is comprised of an amino acid sequence when the amino acid

sequence is at least part of the final amino acid sequence of the protein. In such a fashion, the protein can be only the peptide or have additional amino acid molecules, such as amino acid residues (contiguous encoded sequence) that are naturally associated with it or heterologous amino acid residues/peptide sequences. Such a protein can have a few additional amino acid residues or can comprise several hundred or more additional amino acids. A brief description of how various types of these proteins can be made/isolated is provided below.

The estrogen receptor protein of the present invention can be attached to heterologous sequences to form chimeric or fusion proteins. Such chimeric and fusion proteins comprise a estrogen receptor protein operatively linked to a heterologous protein having an amino acid sequence not substantially homologous to the estrogen receptor protein. "Operatively linked" indicates that the estrogen receptor protein and the heterologous protein are fused in-frame. The heterologous protein can be fused to the N-terminus or C-terminus of the estrogen receptor protein.

In some uses, the fusion protein does not affect the activity of the estrogen receptor protein *per se*. For example, the fusion protein can include, but is not limited to, enzymatic fusion proteins, for example beta-galactosidase fusions, yeast two-hybrid GAL fusions, poly-His fusions, MYC-tagged, HI-tagged and Ig fusions. Such fusion proteins, particularly poly-His fusions, can facilitate the purification of recombinant estrogen receptor protein. In certain host cells (e.g., mammalian host cells), expression and/or secretion of a protein can be increased by using a heterologous signal sequence.

A chimeric or fusion protein can be produced by standard recombinant DNA techniques. For example, DNA fragments coding for the different protein sequences are ligated together in-frame in accordance with conventional techniques. In another embodiment, the fusion gene can be synthesized by conventional techniques including automated DNA synthesizers.

Alternatively, PCR amplification of gene fragments can be carried out using anchor primers which give rise to complementary overhangs between two consecutive gene fragments which can subsequently be annealed and re-amplified to generate a chimeric gene sequence (see Ausubel *et al.*, *Current Protocols in Molecular Biology*, 1992). Moreover, many expression vectors are commercially available that already encode a fusion moiety (e.g., a GST protein). A estrogen receptor protein-encoding nucleic acid can be cloned into such an expression vector such that the fusion moiety is linked in-frame to the estrogen receptor protein.

Polypeptides often contain amino acids other than the 20 amino acids commonly referred to as the 20 naturally-occurring amino acids. Further, many amino acids, including the terminal amino acids, may be modified by natural processes, such as processing and other

post-translational modifications, or by chemical modification techniques well known in the art. Common modifications that occur naturally in polypeptides are described in basic texts, detailed monographs, and the research literature, and they are well known to those of skill in the art. Accordingly, the polypeptides also encompass derivatives or analogs in which a substituted amino acid residue is not one encoded by the genetic code, in which a substituent group is included, in which the mature polypeptide is fused with another compound, such as a compound to increase the half-life of the polypeptide (for example, polyethylene glycol), or in which the additional amino acids are fused to the mature polypeptide, such as a leader or secretory sequence or a sequence for purification of the mature polypeptide or a pro-protein sequence.

Known modifications include, but are not limited to, acetylation, acylation, ADP-ribosylation, amidation, covalent attachment of flavin, covalent attachment of a heme moiety, covalent attachment of a nucleotide or nucleotide derivative, covalent attachment of a lipid or lipid derivative, covalent attachment of phosphatidylinositol, cross-linking, cyclization, disulfide bond formation, demethylation, formation of covalent crosslinks, formation of cystine, formation of pyroglutamate, formylation, gamma carboxylation, glycosylation, GPI anchor formation, hydroxylation, iodination, methylation, myristoylation, oxidation, proteolytic processing, phosphorylation, prenylation, racemization, selenoylation, sulfation, transfer-RNA mediated addition of amino acids to proteins such as arginylation, and ubiquitination.

Such modifications are well-known to those of skill in the art and have been described in great detail in the scientific literature. Several particularly common modifications, glycosylation, lipid attachment, sulfation, gamma-carboxylation of glutamic acid residues, hydroxylation and ADP-ribosylation, for instance, are described in most basic texts, such as *Proteins - Structure and Molecular Properties*, 2nd Ed., T.E. Creighton, W. H. Freeman and Company, New York (1993). Many detailed reviews are available on this subject, such as by Wold, F., *Posttranslational Covalent Modification of Proteins*, B.C. Johnson, Ed., Academic Press, New York 1-12 (1983); Seifter *et al.* (*Meth. Enzymol.* 182: 626-646 (1990)) and Rattan *et al.* (*Ann. N.Y. Acad. Sci.* 663:48-62 (1992)).

The present invention further provides fragments of the estrogen receptor proteins of the present invention, in addition to proteins and peptides that comprise and consist of such fragments. The fragments to which the invention pertains, however, are not to be construed as encompassing fragments that may be disclosed publicly prior to the present invention.

As used herein, a fragment comprises at least 8 or more contiguous amino acid residues from a estrogen receptor protein. Such fragments can be chosen based on the ability to retain

one or more of the biological activities of the estrogen receptor protein or could be chosen for the ability to perform a function, e.g. act as an immunogen. Particularly important fragments are biologically active fragments, peptides which are, for example, about 8 or more amino acids in length, that contain a variant amino acid residue (Figure 2). Such fragments will typically
5 comprise a domain or motif of the estrogen receptor proteins of the present invention, e.g., active site, ligand binding domain or DNA binding domain. Further, possible fragments include, but are not limited to, domain or motif containing fragments, soluble peptide fragments, and fragments containing immunogenic structures. Predicted domains and functional sites are readily identifiable by computer programs well-known and readily available to those of skill in the art
10 (e.g., PROSITE analysis).

Protein/Peptide Uses

The proteins of the present invention can be used in assays to determine the biological activity of the protein, including in a panel of multiple proteins for high-throughput
15 screening; to raise antibodies or to elicit another immune response; as a reagent (including the labeled reagent) in assays designed to quantitatively determine levels of the protein (or its binding partner or receptor) in biological fluids; and as markers for tissues in which the corresponding protein is preferentially expressed (either constitutively or at a particular stage of tissue differentiation or development or in a disease state). Any or all of these research
20 utilities are capable of being developed into reagent grade or kit format for commercialization as research products. Methods for performing the uses listed above are well known to those skilled in the art. References disclosing such methods include "Molecular Cloning: A Laboratory Manual", 2d ed., Cold Spring Harbor Laboratory Press, Sambrook, J., E. F. Fritsch and T. Maniatis eds., 1989, and "Methods in Enzymology: Guide to Molecular
25 Cloning Techniques", Academic Press, Berger, S. L. and A. R. Kimmel eds., 1987.

The estrogen receptor proteins of the present invention are useful for biological assay. Such assays involve any of the known estrogen receptor functions or activities or properties useful for the diagnosis and treatment of estrogen receptor-related conditions.

The estrogen receptor proteins of the present invention are also useful in drug screening
30 assays, in cell-based or cell-free systems. Cell-based systems can be native, i.e., cells that normally express the receptor protein, as a biopsy or expanded in cell culture. In one embodiment, however, cell-based assays involve recombinant host cells expressing the receptor protein.

The estrogen receptor proteins of the present invention can be used to identify compounds that modulate receptor activity. Both the estrogen receptor protein of the present invention and appropriate fragments can be used in high-throughput screens to assay candidate compounds for the ability to bind and/or modulate the activity of the receptor. These
5 compounds can be further screened against a functional receptor to determine the effect of the compound on the receptor activity. Further, these compounds can be tested in animal or invertebrate systems to determine activity/effectiveness. Compounds can be identified that activate (agonist) or inactivate (antagonist) the receptor to a desired degree. Such compounds can be selected for the ability to act on one or more of the variant estrogen receptor proteins of
10 the present invention.

Further, the receptor polypeptides can be used to screen a compound for the ability to stimulate or inhibit interaction between the receptor protein and a target molecule that normally interacts with the receptor protein, e.g. estrogen. The target can be ligand or a binding partner that the receptor protein normally interacts (for example, an estrogen ligand or a DNA
15 sequence). Such assays typically include the steps of combining the receptor protein with a candidate compound under conditions that allow the receptor protein, or fragment, to interact with the target molecule, and to detect the formation of a complex between the protein and the target or to detect the biochemical consequence of the interaction with the receptor protein and the target, such as any of the associated effects of DNA binding or signal transduction.

20 Candidate compounds include, for example, 1) peptides such as soluble peptides, including Ig-tailed fusion peptides and members of random peptide libraries (see, e.g., Lam *et al.*, *Nature* 354:82-84 (1991); Houghten *et al.*, *Nature* 354:84-86 (1991)) and combinatorial chemistry-derived molecular libraries made of D- and/or L- configuration amino acids; 2) phosphopeptides (e.g., members of random and partially degenerate, directed phosphopeptide
25 libraries, see, e.g., Songyang *et al.*, *Cell* 72:767-778 (1993)); 3) antibodies (e.g., polyclonal, monoclonal, humanized, anti-idiotypic, chimeric, and single chain antibodies as well as Fab, F(ab')₂, Fab expression library fragments, and epitope-binding fragments of antibodies); and 4) small organic and inorganic molecules (e.g., molecules obtained from combinatorial and natural product libraries).

30 One candidate compound is a soluble fragment of the receptor that competes for ligand binding. Other candidate compounds include mutant receptors or appropriate fragments containing mutations that affect receptor function and thus compete for ligand. Accordingly, a fragment that competes for ligand, for example with a higher affinity, or a fragment that binds ligand but does not allow release, is encompassed by the invention.

The invention further includes other end point assays to identify compounds that modulate (stimulate or inhibit) receptor activity. The assays typically involve an assay of events in the signal transduction pathway that indicate receptor activity. Thus, the expression of genes that are up- or down-regulated in response to the receptor protein dependent signal cascade can be assayed. In one embodiment, the regulatory region of such genes can be operably linked to a marker that is easily detectable, such as luciferase. Alternatively, phosphorylation of the receptor protein, or a receptor protein target, could also be measured. Any of the biological or biochemical functions mediated by the receptor can be used as an endpoint assay. These include all of the biochemical or biochemical/biological events described herein, in the references cited herein, incorporated by reference for these endpoint assay targets, and other functions known to those of ordinary skill in the art.

The receptor polypeptides are also useful in competition binding assays in methods designed to discover compounds that interact with the receptor. Thus, a compound is exposed to a receptor polypeptide under conditions that allow the compound to bind or to otherwise interact with the polypeptide. Ligands to the receptor is also added to the mixture. If the test compound interacts with the receptor or ligand, it decreases the amount of complex formed or activity from the receptor target. This type of assay is particularly useful in cases in which compounds are sought that interact with specific regions of the receptor.

To perform cell free drug screening assays, it is sometimes desirable to immobilize either the receptor protein, or fragment, or its target molecule to facilitate separation of complexes from uncomplexed forms of one or both of the proteins, as well as to accommodate automation of the assay.

Techniques for immobilizing proteins on matrices can be used in the drug screening assays. In one embodiment, a fusion protein can be provided which adds a domain that allows the protein to be bound to a matrix. For example, glutathione-S-transferase/15625 fusion proteins can be adsorbed onto glutathione sepharose beads (Sigma Chemical, St. Louis, MO) or glutathione derivatized microtitre plates, which are then combined with the cell lysates (e.g., ³⁵S-labeled) and the candidate compound, and the mixture incubated under conditions conducive to complex formation (e.g., at physiological conditions for salt and pH). Following incubation, the beads are washed to remove any unbound label, and the matrix immobilized and radiolabel determined directly, or in the supernatant after the complexes are dissociated. Alternatively, the complexes can be dissociated from the matrix, separated by SDS-PAGE, and the level of receptor-binding protein found in the bead fraction quantitated from the gel using standard electrophoretic techniques. For example, either the polypeptide or its target molecule can be

immobilized utilizing conjugation of biotin and streptavidin using techniques well known in the art. Alternatively, antibodies reactive with the protein but which do not interfere with binding of the protein to its target molecule can be derivatized to the wells of the plate, and the protein trapped in the wells by antibody conjugation. Preparations of a receptor-binding protein and a candidate compound are incubated in the receptor protein-presenting wells and the amount of complex trapped in the well can be quantitated. Methods for detecting such complexes, in addition to those described above for the GST-immobilized complexes, include immunodetection of complexes using antibodies reactive with the receptor protein target molecule, or which are reactive with receptor protein and compete with the target molecule, as well as enzyme-linked assays which rely on detecting an enzymatic activity associated with the target molecule.

Agents that modulate the protein of the present invention can be identified using one or more of the above assays, alone or in combination. It is generally preferable to use a cell-based or cell free system first and then confirm activity in an animal or other model system. Such model systems are well known in the art and can readily be employed in this context.

Modulators of receptor protein activity identified according to these drug screening assays can be used to treat a subject with a disorder mediated by the receptor pathway, by treating cells that express the estrogen receptor protein. These methods of treatment include the steps of administering the modulators of protein activity in a pharmaceutical composition as described herein, to a subject in need of such treatment.

This invention further pertains to novel agents identified by the above-described screening assays. Accordingly, it is within the scope of this invention to further use an agent identified as described herein in an appropriate animal model. For example, an agent identified as described herein (e.g., an estrogen receptor modulating agent, an antisense estrogen receptor nucleic acid molecule, an estrogen receptor-specific antibody, or an estrogen receptor-binding partner) can be used in an animal model to determine the efficacy, toxicity, or side effects of treatment with such an agent. Alternatively, an agent identified as described herein can be used in an animal model to determine the mechanism of action of such an agent. Furthermore, this invention pertains to uses of novel agents identified by the above-described screening assays for treatments as described herein.

The estrogen receptor proteins of the present invention are also useful to provide a target for diagnosing a disease or predisposition to disease mediated by the estrogen receptor. Accordingly, the invention provides methods for detecting the presence, or levels of, the estrogen receptor variants of the present invention (or encoding mRNA) in a cell, tissue, or

organism. The method involves contacting a biological sample with a compound capable of interacting with the receptor protein (or gene or mRNA encoding the receptor) such that the interaction can be detected.

One agent for detecting a protein in a sample is an antibody capable of selectively
5 binding to a variant form of the estrogen receptor protein. Such samples include tissues, cells and biological fluids isolated from a subject, as well as tissues, cells and fluids present within a subject.

The estrogen receptor proteins of the present invention also provide targets for
diagnosing active disease, or predisposition to disease, in a patient having a variant estrogen
10 receptor, particularly a disease involving the estrogen pathway, such as bone growth, cell differentiation, etc. Thus, the receptor can be isolated from a biological sample and assayed for the presence of a genetic mutation that results in aberrant receptor activity. This includes amino acid substitution, deletion, insertion, rearrangement, (as the result of aberrant splicing events), and inappropriate post-translational modification as provided in Figure 2. Analytic methods
15 include altered electrophoretic mobility, altered tryptic peptide digest, altered receptor activity in cell-based or cell-free assay, alteration in ligand or antibody-binding pattern, altered isoelectric point, direct amino acid sequencing, and any other of the known assay techniques useful for detecting mutations in a protein. Particularly useful are the variation provided in Figure 2.

In vitro techniques for detection of peptide include enzyme linked immunosorbent
20 assays (ELISAs), Western blots, immunoprecipitations and immunofluorescence. Alternatively, the peptide can be detected *in vivo* in a subject by introducing into the subject a labeled anti-peptide antibody. For example, the antibody can be labeled with a radioactive marker whose presence and location in a subject can be detected by standard imaging techniques. Particularly useful are methods that detect the specific allelic variants of the estrogen receptor disclosed
25 herein that are expressed in a subject and methods which detect fragments of a peptide in a sample.

The peptides are also useful in pharmacogenomic analysis. Pharmacogenomics deal with clinically significant hereditary variations in the response to drugs due to altered drug disposition and abnormal action in affected persons. See, e.g., Eichelbaum, M. (*Clin. Exp.*
30 *Pharmacol. Physiol.* 23(10-11):983-985 (1996)), and Linder, M.W. (*Clin. Chem.* 43(2):254-266 (1997)). The clinical outcomes of these variations result in severe toxicity of therapeutic drugs in certain individuals or therapeutic failure of drugs in certain individuals as a result of individual variation in metabolism. Thus, the genotype of the individual can determine the way a therapeutic compound acts on the body or the way the body metabolizes the compound.

Further, the activity of drug metabolizing enzymes effects both the intensity and duration of drug action. Thus, the pharmacogenomics of the individual permit the selection of effective compounds and effective dosages of such compounds for prophylactic or therapeutic treatment based on the individual's genotype. The discovery of genetic polymorphisms in some drug
5 metabolizing enzymes has explained why some patients do not obtain the expected drug effects, show an exaggerated drug effect, or experience serious toxicity from standard drug dosages. Polymorphisms can be expressed in the phenotype of the extensive metabolizer and the phenotype of the poor metabolizer. Accordingly, genetic polymorphism may lead to allelic protein variants of the receptor protein in which one or more of the receptor functions in one
10 population is different from those in another population. The peptides thus allow a target to ascertain a genetic predisposition that can affect treatment modality. Thus, in a ligand-based treatment, polymorphism may give rise to amino terminal extracellular domains and/or other ligand-binding regions that are more or less active in ligand binding, and receptor activation. Accordingly, ligand dosage would necessarily be modified to maximize the therapeutic effect
15 within a given population containing a polymorphism/haplotype. As an alternative to genotyping, specific polymorphic peptides could be identified.

Antibodies

The invention also provides antibodies that selectively bind to the estrogen receptor
20 proteins of the present invention as well as fragments thereof. As used herein, an antibody selectively binds a target protein when it binds the target protein and does not significantly bind to unrelated proteins. An antibody is still considered to selectively bind a protein even if it also binds to other proteins that are not substantially homologous with the target protein so long as such proteins share homology with a fragment or domain of the protein target of the antibody.
25 In this case, it would be understood that antibody binding to the protein is still selective despite some degree of cross-reactivity.

As used herein, an antibody is defined in terms consistent with that recognized within the art: they are multi-subunit proteins produced by a mammalian organism in response to an antigen challenge. The antibodies of the present invention include polyclonal antibodies and
30 monoclonal antibodies, as well as fragments of such antibodies, including, but not limited to, Fab or F(ab')₂, and Fv fragments.

Many methods are known for generating and/or identifying antibodies to a given target peptide. Several such methods are described by Harlow, Antibodies, Cold Spring Harbor Press, (1989). In general, to generate antibodies, an isolated peptide is used as an immunogen and is

administered to a mammalian organism, such as a rat, rabbit or mouse. The full-length protein, an antigenic peptide fragment or a fusion protein can be used.

Antibodies are preferably prepared from regions or discrete fragments of the estrogen receptor protein. Antibodies can be prepared from any region of the peptide as described
5 herein. However, preferred regions will include those involved in function/activity and/or receptor/binding partner interaction. An antigenic fragment will typically comprise at least 10 contiguous amino acid residues. The antigenic peptide can comprise, however, at least 12, 14, 20 or more amino acid residues. Such fragments can be selected on a physical property, such as fragments correspond to regions that are located on the surface of the protein, e.g., hydrophilic
10 regions or can be selected based on sequence uniqueness.

Detection on an antibody of the present invention can be facilitated by coupling (i.e., physically linking) the antibody to a detectable substance. Examples of detectable substances include various enzymes, prosthetic groups, fluorescent materials, luminescent materials, bioluminescent materials, and radioactive materials. Examples of suitable enzymes include
15 horseradish peroxidase, alkaline phosphatase, β -galactosidase, or acetylcholinesterase; examples of suitable prosthetic group complexes include streptavidin/biotin and avidin/biotin; examples of suitable fluorescent materials include umbelliferone, fluorescein, fluorescein isothiocyanate, rhodamine, dichlorotriazinylamine fluorescein, dansyl chloride or phycoerythrin; an example of a luminescent material includes luminol; examples of bioluminescent materials include
20 luciferase, luciferin, and aequorin, and examples of suitable radioactive material include ^{125}I , ^{131}I , ^{35}S or ^3H .

Antibody Uses

The antibodies can be used to isolate the estrogen receptor protein of the present
25 invention by standard techniques, such as affinity chromatography or immunoprecipitation. The antibodies can facilitate the purification of the natural protein from cells and recombinantly produced protein expressed in host cells. In addition, such antibodies are useful to detect the presence of the estrogen receptor protein of the present invention in cells or tissues to determine the pattern of expression of the protein among various tissues in an organism and over the course
30 of normal development. Further, such antibodies can be used to detect protein *in situ*, *in vitro*, or in a cell lysate or supernatant in order to evaluate the abundance and pattern of expression. Also, such antibodies can be used to assess abnormal tissue distribution or abnormal expression

during development. Antibody detection of circulating fragments of the full length estrogen receptor protein can be used to identify turnover.

Further, the antibodies can be used to assess expression in disease states such as in active stages of the disease or in an individual with a predisposition toward disease related to the protein's function, particularly diseases involving bone growth/formation/degeneration. When a disorder is caused by an inappropriate tissue distribution, developmental expression, level of expression of the protein, or expressed/processed form, the antibody can be prepared against the normal protein. If a disorder is characterized by a specific mutation in the protein, antibodies specific for this mutant protein can be used to assay for the presence of the specific mutant protein.

The antibodies can also be used to assess normal and aberrant subcellular localization of cells in the various tissues in an organism. The diagnostic uses can be applied, not only in genetic testing, but also in monitoring a treatment modality. Accordingly, where treatment is ultimately aimed at correcting the expression level or the presence of aberrant sequence and aberrant tissue distribution or developmental expression, antibodies directed against the protein or relevant fragments can be used to monitor therapeutic efficacy.

Additionally, antibodies are useful in pharmacogenomic analysis. Thus, antibodies prepared against polymorphic proteins can be used to identify individuals that require modified treatment modalities. The antibodies are also useful as diagnostic tools as an immunological marker for aberrant estrogen receptor protein analyzed by electrophoretic mobility, isoelectric point, tryptic peptide digest, and other physical assays known to those in the art.

The antibodies are also useful for inhibiting protein function, for example, blocking the binding of the estrogen receptor protein to a binding partner such as a ligand. These uses can also be applied in a therapeutic context in which treatment involves inhibiting the protein's function. An antibody can be used, for example, to block binding, thus modulating (agonizing or antagonizing) the peptides activity. Antibodies can be prepared against specific fragments containing sites required for function or against intact protein that is associated with a cell or cell membrane.

The invention also encompasses kits for using antibodies to detect the presence of a protein in a biological sample. The kit can comprise antibodies such as a labeled or labelable antibody and a compound or agent for detecting estrogen receptor protein in a biological sample; means for determining the amount of protein in the sample; means for comparing the amount of estrogen receptor protein in the sample with a standard; and instructions for use.

Nucleic Acid Molecules

The present invention further provides isolated nucleic acid molecules that encode any of the estrogen receptor proteins of the present invention. Such nucleic acid molecules will consist of, consist essentially of, or comprise a nucleotide sequence that encodes one of the estrogen
5 receptor proteins of the present invention.

As used herein, an "isolated" nucleic acid molecule is one that is separated from other nucleic acid present in the natural source of the nucleic acid. Preferably, an "isolated" nucleic acid is free of sequences which naturally flank the nucleic acid (i.e., sequences located at the 5' and 3' ends of the nucleic acid) in the genomic DNA of the organism from which the nucleic
10 acid is derived. However, there can be some flanking nucleotide sequences, for example up to about 5KB, 4KB, 3KB, 2KB, or 1KB or less, particularly contiguous peptide encoding sequences and peptide encoding sequences within the same gene but separated by introns in the genomic sequence. The important point is that the nucleic acid is isolated from remote and unimportant flanking sequences such that it can be subjected to the specific manipulations
15 described herein such as recombinant expression, preparation of probes and primers, and other uses specific to the nucleic acid sequences.

Moreover, an "isolated" nucleic acid molecule, such as a cDNA molecule, can be substantially free of other cellular material, or culture medium when produced by recombinant techniques, or chemical precursors or other chemicals when chemically synthesized. However,
20 the nucleic acid molecule can be fused to other coding or regulatory sequences and still be considered isolated.

For example, recombinant DNA molecules contained in a vector are considered isolated. Further examples of isolated DNA molecules include recombinant DNA molecules maintained in heterologous host cells or purified (partially or substantially) DNA molecules in solution.
25 Isolated RNA molecules include *in vivo* or *in vitro* RNA transcripts of the isolated DNA molecules of the present invention. Isolated nucleic acid molecules according to the present invention further include such molecules produced synthetically.

Accordingly, the present invention provides nucleic acid molecules that consist of the nucleotide sequences shown in Figure 1, including one or more of the sequence polymorphisms
30 provided in Figure 2. A nucleic acid molecule consists of a nucleotide sequence when the nucleotide sequence is the complete nucleotide sequence of the nucleic acid molecule.

The present invention further provides nucleic acid molecules that consist essentially of the nucleotide sequence shown in Figure 1, including one or more of the sequence polymorphisms provided in Figure 2. A nucleic acid molecule consists essentially of a

nucleotide sequence when such a nucleotide sequence is present with only a few additional nucleic acid residues in the final nucleic acid molecule.

The present invention further provides nucleic acid molecules that are comprised of the nucleotide sequences shown in Figure 1, including one or more of the sequence polymorphisms provided in Figure 2. A nucleic acid molecule is comprised of a nucleotide sequence when the nucleotide sequence is at least part of the final nucleotide sequence of the nucleic acid molecule. In such a fashion, the nucleic acid molecule can be only the nucleotide sequence or have additional nucleic acid residues, such as nucleic acid residues that are naturally associated with it or heterologous nucleotide sequences. Such a nucleic acid molecule can have a few additional nucleotides or can comprises several hundred or more additional nucleotides. A brief description of how various types of these nucleic acid molecules can be readily made/isolated is provided below.

The isolated nucleic acid molecules can encode the mature protein plus additional amino or carboxyl-terminal amino acids, or amino acids interior to the mature peptide (when the mature form has more than one peptide chain, for instance). Such sequences may play a role in processing of a protein from precursor to a mature form, facilitate protein trafficking, prolong or shorten protein half-life or facilitate manipulation of a protein for assay or production, among other things. As generally is the case *in situ*, the additional amino acids may be processed away from the mature protein by cellular enzymes.

As mentioned above, the isolated nucleic acid molecules include, but are not limited to, the sequence encoding the estrogen receptor protein alone, the sequence encoding the mature peptide and additional coding sequences, such as a leader or secretory sequence (e.g., a pre-pro or pro-protein sequence), the sequence encoding the mature peptide, with or without the additional coding sequences, plus additional non-coding sequences, for example introns and non-coding 5' and 3' sequences such as transcribed but non-translated sequences that play a role in transcription, mRNA processing (including splicing and polyadenylation signals), ribosome binding and stability of mRNA, as well as genomic regulatory sequences such as promoters. In addition, the nucleic acid molecule may be fused to a marker sequence encoding, for example, a peptide that facilitates purification.

Isolated nucleic acid molecules can be in the form of RNA, such as mRNA, or in the form DNA, including cDNA and genomic DNA obtained by cloning or produced by chemical synthetic techniques or by a combination thereof. The nucleic acid, especially DNA, can be double-stranded or single-stranded. Single-stranded nucleic acid can be the coding strand (sense strand) or the non-coding strand (anti-sense strand).

The invention further provides nucleic acid molecules that encode fragments of the proteins of the present invention. A fragment comprises a contiguous nucleotide sequence greater than 12 or more nucleotides. Further, a fragment could at least 30, 40, 50, 100, 250 or 500 nucleotides in length. The length of the fragment will be based on its intended use. For example, the fragment can encode epitope bearing regions of the peptide, or can be useful as DNA probes and primers. Such fragments can be isolated using the known nucleotide sequence to synthesize an oligonucleotide probe. A labeled probe can then be used to screen a cDNA library, genomic DNA library, or mRNA to isolate nucleic acid corresponding to the coding region. Further, primers can be used in PCR reactions to clone specific regions of gene.

A probe/primer typically comprises substantially a purified oligonucleotide or oligonucleotide pair. The oligonucleotide typically comprises a region of nucleotide sequence that hybridizes under stringent conditions to at least about 12, 20, 25, 40, 50 or more consecutive nucleotides.

As used herein, the term "hybridizes under stringent conditions" is intended to describe conditions for hybridization and washing under which nucleotide sequences encoding a peptide at least 50-55% homologous to each other typically remain hybridized to each other. The conditions can be such that sequences at least about 65%, at least about 70%, or at least about 75% or more homologous to each other typically remain hybridized to each other. Such stringent conditions are known to those skilled in the art and can be found in *Current Protocols in Molecular Biology*, John Wiley & Sons, N.Y. (1989), 6.3.1-6.3.6. One example of stringent hybridization conditions are hybridization in 6X sodium chloride/sodium citrate (SSC) at about 45C, followed by one or more washes in 0.2 X SSC, 0.1% SDS at 50-65C.

Nucleic Acid Molecule Uses

The nucleic acid molecules of the present invention are useful for probes, primers, chemical intermediates, and in biological assays. The probe can correspond to any sequence along the entire length of the nucleic acid molecules provided in Figure 1, including one or more of the sequence polymorphisms provided in Figure 2. Accordingly, it could be derived from 5' noncoding regions, the coding region, and 3' noncoding regions. However, as discussed, fragments are not to be construed as encompassing fragments disclosed prior to the present invention.

The nucleic acid molecules are also useful as primers for PCR to amplify any given region of a nucleic acid molecule and are useful to synthesize antisense molecules of desired length and sequence.

The nucleic acid molecules are also useful for constructing recombinant vectors. Such vectors include expression vectors that express a portion of, or all of, the peptide sequences. Vectors also include insertion vectors, used to integrate into another nucleic acid molecule sequence, such as into the cellular genome, to alter *in situ* expression of a gene and/or gene product. For example, an endogenous coding sequence can be replaced via homologous recombination with all or part of the coding region containing one or more specifically introduced mutations.

The nucleic acid molecules are also useful for expressing antigenic portions of the proteins.

The nucleic acid molecules are also useful for designing ribozymes corresponding to all, or a part, of the mRNA produced from the nucleic acid molecules described herein.

The nucleic acid molecules are also useful for constructing host cells expressing a part, or all, of the nucleic acid molecules and peptides.

The nucleic acid molecules are also useful for constructing transgenic animals expressing all, or a part, of the nucleic acid molecules and peptides.

The nucleic acid molecules are also useful for making vectors that express part, or all, of the peptides.

The nucleic acid molecules are also useful as hybridization probes for determining the presence, level, form and distribution of nucleic acid expression. Accordingly, the probes can be used to detect the presence of, or to determine levels of, a specific nucleic acid molecule in cells, tissues, and in organisms. The nucleic acid whose level is determined can be DNA or RNA.

Accordingly, probes corresponding to the peptides described herein can be used to assess expression and/or gene copy number in a given cell, tissue, or organism. These uses are relevant for diagnosis of disorders involving an increase or decrease in estrogen receptor protein expression relative to normal results.

In vitro techniques for detection of mRNA include Northern hybridizations and *in situ* hybridizations. *In vitro* techniques for detecting DNA include Southern hybridizations and *in situ* hybridization.

Probes can be used as a part of a diagnostic test kit for identifying cells or tissues that express a estrogen receptor proteins of the present invention, such as by measuring a level of a

receptor-encoding nucleic acid in a sample of cells from a subject e.g., mRNA or genomic DNA, or determining if a receptor gene has been mutated.

Nucleic acid expression assays are useful for drug screening to identify compounds that modulate estrogen receptor nucleic acid expression.

5 The invention thus provides a method for identifying a compound that can be used to treat a disorder associated with nucleic acid expression of the estrogen receptor gene. The method typically includes assaying the ability of the compound to modulate the expression of the estrogen receptor nucleic acid and thus identifying a compound that can be used to treat a disorder characterized by undesired estrogen receptor nucleic acid expression. The assays can
10 be performed in cell-based and cell-free systems. Cell-based assays include cells naturally expressing the estrogen receptor nucleic acid or recombinant cells genetically engineered to express specific nucleic acid sequences.

 The assay for estrogen receptor nucleic acid expression can involve direct assay of nucleic acid levels, such as mRNA levels, or on collateral compounds involved in the signal
15 pathway. Further, the expression of genes that are up- or down-regulated in response to the estrogen receptor protein signal pathway can also be assayed. In this embodiment the regulatory regions of these genes can be operably linked to a reporter gene such as luciferase.

 Thus, modulators of estrogen receptor gene expression can be identified in a method wherein a cell is contacted with a candidate compound and the expression of mRNA
20 determined. The level of expression of estrogen receptor mRNA in the presence of the candidate compound is compared to the level of expression of estrogen receptor mRNA in the absence of the candidate compound. The candidate compound can then be identified as a modulator of nucleic acid expression based on this comparison and be used, for example to treat a disorder characterized by aberrant nucleic acid expression. When expression of mRNA is
25 statistically significantly greater in the presence of the candidate compound than in its absence, the candidate compound is identified as a stimulator of nucleic acid expression. When nucleic acid expression is statistically significantly less in the presence of the candidate compound than in its absence, the candidate compound is identified as an inhibitor of nucleic acid expression.

 The invention further provides methods of treatment, with the nucleic acid as a target,
30 using a compound identified through drug screening as a gene modulator to modulate estrogen receptor nucleic acid expression. Modulation includes both up-regulation (i.e. activation or agonization) or down-regulation (suppression or antagonization) or nucleic acid expression.

Alternatively, a modulator for estrogen receptor nucleic acid expression can be a small molecule or drug identified using the screening assays described herein as long as the drug or small molecule inhibits the estrogen receptor nucleic acid expression.

The nucleic acid molecules are also useful for monitoring the effectiveness of modulating compounds on the expression or activity of the estrogen receptor gene in clinical trials or in a treatment regimen. Thus, the gene expression pattern can serve as a barometer for the continuing effectiveness of treatment with the compound, particularly with compounds to which a patient can develop resistance. The gene expression pattern can also serve as a marker indicative of a physiological response of the affected cells to the compound. Accordingly, such monitoring would allow either increased administration of the compound or the administration of alternative compounds to which the patient has not become resistant. Similarly, if the level of nucleic acid expression falls below a desirable level, administration of the compound could be commensurately decreased.

The nucleic acid molecules are also useful in diagnostic assays for qualitative changes in estrogen receptor nucleic acid, and particularly in qualitative changes that lead to pathology. The nucleic acid molecules can be used to detect mutations in estrogen receptor genes and gene expression products such as mRNA. The nucleic acid molecules can be used as hybridization probes to detect naturally-occurring genetic mutations in the estrogen receptor gene and thereby to determine whether a subject with the mutation is at risk for a disorder caused by the mutation. Mutations include deletion, addition, or substitution of one or more nucleotides in the gene, chromosomal rearrangement, such as inversion or transposition, modification of genomic DNA, such as aberrant methylation patterns or changes in gene copy number, such as amplification. Detection of a mutated form of the estrogen receptor gene associated with a dysfunction provides a diagnostic tool for an active disease or susceptibility to disease when the disease results from overexpression, underexpression, or altered expression of a estrogen receptor protein.

Individuals carrying mutations in the estrogen receptor gene can be detected at the nucleic acid level by a variety of techniques. Genomic DNA can be analyzed directly or can be amplified by using PCR prior to analysis. RNA or cDNA can be used in the same way. In some uses, detection of the mutation involves the use of a probe/primer in a polymerase chain reaction (PCR) (see, e.g. U.S. Patent Nos. 4,683,195 and 4,683,202), such as anchor PCR or RACE PCR, or, alternatively, in a ligation chain reaction (LCR) (see, e.g., Landegran *et al.*, *Science* 241:1077-1080 (1988); and Nakazawa *et al.*, *PNAS* 91:360-364 (1994)), the latter of which can be particularly useful for detecting point mutations in the gene (see Abravaya *et al.*, *Nucleic*

Acids Res. 23:675-682 (1995)). This method can include the steps of collecting a sample of cells from a patient, isolating nucleic acid (e.g., genomic, mRNA or both) from the cells of the sample, contacting the nucleic acid sample with one or more primers which specifically hybridize to a gene under conditions such that hybridization and amplification of the gene (if present) occurs, and detecting the presence or absence of an amplification product, or detecting the size of the amplification product and comparing the length to a control sample. Deletions and insertions can be detected by a change in size of the amplified product compared to the normal genotype. Point mutations can be identified by hybridizing amplified DNA to normal RNA or antisense DNA sequences.

Alternatively, mutations in a estrogen receptor gene can be directly identified, for example, by alterations in restriction enzyme digestion patterns determined by gel electrophoresis.

Further, sequence-specific ribozymes (U.S. Patent No. 5,498,531) can be used to score for the presence of specific mutations by development or loss of a ribozyme cleavage site.

Perfectly matched sequences can be distinguished from mismatched sequences by nuclease cleavage digestion assays or by differences in melting temperature.

Sequence changes at specific locations can also be assessed by nuclease protection assays such as RNase and S1 protection or the chemical cleavage method. Furthermore, sequence differences between a mutant estrogen receptor gene and a wild-type gene can be determined by direct DNA sequencing. A variety of automated sequencing procedures can be utilized when performing the diagnostic assays ((1995) *Biotechniques* 19:448), including sequencing by mass spectrometry (see, e.g., PCT International Publication No. WO 94/16101; Cohen *et al.*, *Adv. Chromatogr.* 36:127-162 (1996); and Griffin *et al.*, *Appl. Biochem. Biotechnol.* 38:147-159 (1993)).

Other methods for detecting mutations in the gene include methods in which protection from cleavage agents is used to detect mismatched bases in RNA/RNA or RNA/DNA duplexes (Myers *et al.*, *Science* 230:1242 (1985)); Cotton *et al.*, *PNAS* 85:4397 (1988); Saleeba *et al.*, *Meth. Enzymol.* 217:286-295 (1992)), electrophoretic mobility of mutant and wild type nucleic acid is compared (Orita *et al.*, *PNAS* 86:2766 (1989); Cotton *et al.*, *Mutat. Res.* 285:125-144 (1993); and Hayashi *et al.*, *Genet. Anal. Tech. Appl.* 9:73-79 (1992)), and movement of mutant or wild-type fragments in polyacrylamide gels containing a gradient of denaturant is assayed using denaturing gradient gel electrophoresis (Myers *et al.*, *Nature* 313:495 (1985)). Examples of other techniques for detecting point mutations include, selective oligonucleotide hybridization, selective amplification, and selective primer extension.

The nucleic acid molecules are also useful for testing an individual for a genotype that while not necessarily causing the disease, nevertheless affects the treatment modality. Thus, the nucleic acid molecules can be used to study the relationship between an individual's genotype and the individual's response to a compound used for treatment (pharmacogenomic relationship).

5 Accordingly, the nucleic acid molecules described herein can be used to assess the mutation content of the estrogen receptor gene in an individual in order to select an appropriate compound or dosage regimen for treatment.

Thus nucleic acid molecules displaying genetic variations that affect treatment provide a diagnostic target that can be used to tailor treatment in an individual. Accordingly, the
10 production of recombinant cells and animals containing these polymorphism/haplotypes allow effective clinical design of treatment compounds and dosage regimens.

The nucleic acid molecules are thus useful as antisense constructs to control estrogen receptor gene expression in cells, tissues, and organisms. A DNA antisense nucleic acid molecule is designed to be complementary to a region of the gene involved in transcription,
15 preventing transcription and hence production of estrogen receptor protein. An antisense RNA or DNA nucleic acid molecule would hybridize to the mRNA and thus block translation of mRNA into estrogen receptor protein.

Alternatively, a class of antisense molecules can be used to inactivate mRNA in order to decrease expression of estrogen receptor nucleic acid. Accordingly, these molecules can treat a
20 disorder characterized by abnormal or undesired estrogen receptor nucleic acid expression. This technique involves cleavage by means of ribozymes containing nucleotide sequences complementary to one or more regions in the mRNA that attenuate the ability of the mRNA to be translated. Possible regions include coding regions and particularly coding regions corresponding to the catalytic and other functional activities of the estrogen receptor proteins of
25 the present invention, such as ligand binding.

The nucleic acid molecules also provide vectors for gene therapy in patients containing cells that are aberrant in estrogen receptor gene expression. Thus, recombinant cells, which include the patient's cells that have been engineered *ex vivo* and returned to the patient, are introduced into an individual where the cells produce the desired estrogen receptor protein to
30 treat the individual.

The invention also encompasses kits for detecting the presence of a estrogen receptor nucleic acid in a biological sample. For example, the kit can comprise reagents such as a labeled or labelable nucleic acid or agent capable of detecting estrogen receptor nucleic acid in a biological sample; means for determining the amount of estrogen receptor nucleic acid in the

sample; and means for comparing the amount of estrogen receptor nucleic acid in the sample with a standard. The compound or agent can be packaged in a suitable container. The kit can further comprise instructions for using the kit to detect estrogen receptor protein mRNA or DNA.

5 Design of SNP-Containing Nucleic Acids Detection Methods

The SNP-containing nucleic acid molecules of the present invention are useful as probes, primers, chemical intermediates, and in biological assays for SNPs of the present invention. The probes/primers can correspond to one or more of the SNPs provided in Figure 2 or can correspond to a specific region 5' and/or 3' to a SNP position. However, as discussed above,
10 fragments are not to be construed as encompassing fragments that are not associated with SNPs of the present invention or those known in the art for SNP detection. The SNP-containing nucleic acid molecules and information provided herein are also useful for designing primers for PCR to amplify any given SNP of the present invention and to design any formatted SNP detection reagent/kits.

15 A probe/primer typically comprises substantially a purified oligonucleotide or oligonucleotide pair. The oligonucleotide typically comprises a region of nucleotide sequence that hybridizes under stringent conditions to at least about 12, 20, 25, 40, 50 or more consecutive nucleotides. Depending on the particular application, the consecutive nucleotides can either include the target SNP position, or be a specific region in close enough proximity 5' and/or 3' to
20 the SNP position to carry out the desired assay.

Preferred primer and probe sequences can readily be determined using the sequences provided in Figures 1, 2, and 9. It will be apparent to one of skill in the art that such primers and probes are useful as diagnostic probes or amplification primers for genotyping SNPs of the present invention, and can be incorporated into a kit format.

25 For analyzing SNPs, it may be appropriate to use oligonucleotides specific to alternative SNP alleles (referred to as "allele-specific oligonucleotides", "allele-specific probes", or "allele-specific primers"). The design and use of allele-specific probes for analyzing polymorphisms is described by e.g., Saiki et al., Nature 324, 163-166 (1986); Dattagupta, EP 235,726, Saiki, WO 89/11548.

30 In a hybridization-based assay, allele-specific probes can be designed that hybridize to a segment of target DNA from one individual but do not hybridize to the corresponding segment from another individual due to the presence of different polymorphic forms in the respective segments from the two individuals. Hybridization conditions should be sufficiently stringent that there is a significant difference in hybridization intensity between alleles, and

preferably an essentially binary response, whereby a probe hybridizes to only one of the alleles. Some probes are designed to hybridize to a segment of target DNA such that the polymorphic site aligns with a central position (e.g., in a 15-mer at the 7 position; in a 16-mer, at either the 8 or 9 position) of the probe. This design of probe achieves good discrimination in hybridization between different allelic forms.

Allele-specific probes are often used in pairs, the "pairs" may be identical except for a one nucleotide mismatch that represents the allelic variants at the SNP position. One member of a pair perfectly matches a reference form of a target sequence and the other member perfectly matches a variant form. In the case of an array, several pairs of probes can then be immobilized on the same support for simultaneous analysis of multiple polymorphisms within the same target sequence.

In one type of PCR-based assay, an allele-specific primer hybridizes to a site on target DNA overlapping the SNP position and only primes amplification of an allelic form to which the primer exhibits perfect complementarity. See Gibbs, Nucleic Acid Res. 17 2427-2448 (1989). This primer is used in conjunction with a second primer that hybridizes at a distal site. Amplification proceeds from the two-primers, resulting in a detectable product that indicates the particular allelic form is present. A control is usually performed with a second pair of primers, one of which shows a single base mismatch at the polymorphic site and the other of which exhibits perfect complementarity to a distal site. The single-base mismatch prevents amplification and no detectable product is formed. The method works best when the mismatch is included in the 3'-most position of the oligonucleotide aligned with the polymorphism because this position is most destabilizing to elongation from the primer (see, e.g., WO 93/22456). This PCR-based assay can be utilized as part of the TaqMan assay, described below.

SNP Detection Kits, Nucleic Acid Arrays, and Integrated Systems

The present invention further provides SNP detection kits, such as arrays or microarrays of nucleic acid molecules, or probe/primer sets, that are based on the SNPs provided in Figures 1, 2, 8, 9

In one embodiment of the present invention, kits are provided which contain the necessary reagents to carry out one or more assays that detect one or more SNPs disclosed herein. The present invention also provides multicomponent integrated systems for analyzing the SNPs provided by the present invention.

SNP detection kits may contain one or more oligonucleotide probes, or pairs of probes, that hybridize at or near each SNP position. Multiple pairs of allele-specific oligonucleotides may be included in the kit to simultaneously assay large numbers of SNPs, at least one of which is one of the SNPs of the present invention. In some kits, such as arrays, the allele-specific oligonucleotides are provided immobilized to a substrate. For example, the same substrate can comprise allele-specific oligonucleotide probes for detecting at least 1; 10; 100; 1000; 10,000; 100,000; 300,000 or substantially all of the polymorphisms shown in Figures 1, 2, 8 and 9.

Specifically, the invention provides a compartmentalized kit to receive, in close confinement, one or more containers which comprises: (a) a first container comprising one of the nucleic acid probes, for example an allele-specific oligonucleotide, that can bind to a fragment of the human genome containing a SNP disclosed herein; and (b) one or more other containers comprising one or more of the following: wash reagents or reagents capable of detecting the presence of a bound probe.

In detail, a compartmentalized kit includes any kit in which reagents are contained in separate containers. Such containers include small glass containers, plastic containers, strips of plastic, glass or paper, or arraying material such as silica. Such containers allow one to efficiently transfer reagents from one compartment to another compartment such that the samples and reagents are not cross-contaminated, and the agents or solutions of each container can be added in a quantitative fashion from one compartment to another. Such containers may include a container which will accept the test sample, a container which contains the SNP probe, containers which contain wash reagents (such as phosphate buffered saline, Tris-buffers, etc.), and containers which contain the reagents used to detect the bound probe. The kit can further comprise reagents for PCR or other enzymatic reactions, and instructions for using the kit. One skilled in the art will readily recognize that the previously unidentified SNPs of the present invention can be routinely identified using the sequence information disclosed herein and can be readily incorporated into one of the established kit formats which are well known in the art.

The present invention further provides arrays or microarrays of nucleic acid molecules that are based on the sequence information provided in Figures 1, including one or more of the variations provided in Figure 2.

As used herein "Arrays" or "Microarrays" refers to an array of distinct polynucleotides or oligonucleotides synthesized on a substrate, such as paper, nylon or other type of membrane, filter, chip, glass slide, or any other suitable solid support. In one

embodiment, the microarray is prepared and used according to the methods described in US Patent 5,837,832, Chee et al., PCT application W095/11995 (Chee et al.), Lockhart, D. J. et al. (1996; Nat. Biotech. 14: 1675-1680) and Schena, M. et al. (1996; Proc. Natl. Acad. Sci. 93: 10614-10619), all of which are incorporated herein in their entirety by reference. In other
5 embodiments, such arrays are produced by the methods described by Brown et al., US Patent No. 5,807,522. Arrays or microarrays are commonly referred to as "DNA chips".

Any number of oligonucleotide probes, such as allele-specific oligonucleotides, may be implemented in an array, wherein each probe or pair of probes corresponds to a different SNP position. The oligonucleotides are synthesized at designated areas on a substrate using a light-
10 directed chemical process. The substrate may be paper, nylon or other type of membrane, filter, chip, glass slide or any other suitable solid support.

Hybridization assays based on oligonucleotide arrays rely on the differences in hybridization stability of short oligonucleotides probes to perfectly matched and mismatched target sequence variants. Efficient access to polymorphism information is obtained through a
15 basic structure comprising high-density arrays of oligonucleotide probes attached to a solid support (e.g., a chip) at selected positions. Each DNA chip can contain thousands to millions of individual synthetic DNA probes arranged in a grid-like pattern and miniaturized to the size of a dime, each corresponding to a particular SNP position or allelic variant. Preferably, probes are attached to a solid support in an ordered, addressable array.

20 The array/chip technology has already been applied with success in numerous cases. For example, the screening of mutations has been undertaken in the BRCA1 gene, in *S. cerevisiae* mutant strains, and in the protease gene of HIV- I virus (Hacia et al., 1996; Shoemaker et al., 1996 ; Kozal et al., 1996). Chips of various formats for use in detecting SNPs can be produced on a customized basis.

25 An array-based tiling strategy useful for detecting SNPs is described in EP 785280. Briefly, arrays may generally be "tiled" for a large number of specific polymorphisms. "Tiling" refers to the synthesis of a defined set of oligonucleotide probes that are made up of a sequence complementary to the target sequence of interest, as well as preselected variations of that sequence, e.g., substitution of one or more given positions with one or more members
30 of the basis set of monomers, i.e. nucleotides. Tiling strategies are further described in PCT application No. WO 95/11995. In a particular aspect, arrays are tiled for a number of specific SNPs. In particular, the array is tiled to include a number of detection blocks, each detection block being specific for a specific SNP or a set of SNPs. For example, a detection block may be tiled to include a number of probes that span the sequence segment that includes a specific

SNP. To ensure probes that are complementary to each allele, the probes are synthesized in pairs differing at the SNP position. In addition to the probes differing at the SNP position, monosubstituted probes are also generally tiled within the detection block. Such methods can readily be applied to the SNP information disclosed herein.

5 These monosubstituted probes have bases at and up to a certain number of bases in either direction from the polymorphism, substituted with the remaining nucleotides (selected from A, T, G, C and U). Typically the probes in a tiled detection block will include substitutions of the sequence positions up to and including those that are 5 bases away from the SNP. The monosubstituted probes provide internal controls for the tiled array, to
10 distinguish actual hybridization from artefactual cross-hybridization. Upon completion of hybridization with the target sequence and washing of the array, the array is scanned to determine the position on the array to which the target sequence hybridizes. The hybridization data from the scanned array is then analyzed to identify which allele or alleles of the SNP are present in the sample. Hybridization and scanning may be carried out as
15 described in PCT application No. WO 92/10092 and WO 95/11995 and US patent No. 5,424,186.

Thus, in some embodiments, the chips may comprise an array of nucleic acid sequences of fragments of about 15 nucleotides in length. In further embodiments, the chip may comprise an array including at least one of the sequences selected from the group
20 consisting of those disclosed in the Figures 1, 2, 8, 9, and the sequences complementary thereto, or a fragment thereof, said fragment comprising at least about 8 consecutive nucleotides, preferably 10, 15, 20, more preferably 25, 30, 40, 47, or 50 consecutive nucleotides and containing a polymorphic base. In some embodiments the polymorphic base is within 5, 4, 3, 2, or 1 nucleotides from the center of the polynucleotide, more preferably at
25 the center of said polynucleotide. In other embodiments, the chip may comprise an array containing any number of polynucleotides of the present invention.

An oligonucleotide may be synthesized on the surface of the substrate by using a chemical coupling procedure and an ink jet application apparatus, as described in PCT application W095/251116 (Baldeschweiler et al.) which is incorporated herein in its entirety by
30 reference. In another aspect, a "gridded" array analogous to a dot (or slot) blot may be used to arrange and link cDNA fragments or oligonucleotides to the surface of a substrate using a vacuum system, thermal, UV, mechanical or chemical bonding procedures. An array, such as those described above, may be produced by hand or by using available devices (slot blot or dot blot apparatus), materials (any suitable solid support), and machines (including robotic

instruments), and may contain 8, 24, 96, 384, 1536, 6144 or more oligonucleotides, or any other number which lends itself to the efficient use of commercially available instrumentation.

Using such arrays, the present invention provides methods of identifying the SNPs of the present invention in a sample. Such methods comprise incubating a test sample with an array
5 comprising one or more oligonucleotide probes corresponding to at least one SNP position of the present invention, and assaying for binding of a nucleic acid from the test sample with one or more of the oligonucleotide probes. Such assays will typically involve arrays comprising oligonucleotides probes corresponding to many SNP positions and/or allelic variants of those SNP positions, at least one of which is a SNP of the present invention.

10 Conditions for incubating a nucleic acid molecule with a test sample vary. Incubation conditions depend on the format employed in the assay, the detection methods employed, and the type and nature of the nucleic acid molecule used in the assay. One skilled in the art will recognize that any one of the commonly available hybridization, amplification or array assay formats can readily be adapted to employ the novel SNPs disclosed herein. Examples of such
15 assays can be found in Chard, T, An Introduction to Radioimmunoassay and Related Techniques, Elsevier Science Publishers, Amsterdam, The Netherlands (1986); Bullock, G. R. et al., Techniques in Immunocytochemistry, Academic Press, Orlando, FL Vol. 1 (1982), Vol. 2 (1983), Vol. 3 (1985); Tijssen, P., Practice and Theory of Enzyme Immunoassays: Laboratory Techniques in Biochemistry and Molecular Biology, Elsevier Science Publishers, Amsterdam,
20 The Netherlands (1985).

The test samples of the present invention include, but are not limited to, nucleic acid extracts, cells, and protein or membrane extracts from cells, which may be obtained from any bodily fluids (such as blood, urine, saliva, phlegm, gastric juices, etc.), cultured cells, biopsies, or other tissue preparations. The test sample used in the above-described methods
25 will vary based on the assay format, nature of the detection method and the tissues, cells or extracts used as the sample to be assayed. Methods of preparing nucleic acid, protein, or cell extracts are well known in the art and can be readily be adapted in order to obtain a sample that is compatible with the system utilized.

30 Multicomponent integrated systems may also be used to analyze SNPs. Such systems miniaturize and compartmentalize processes such as PCR and capillary electrophoresis reactions in a single functional device. An example of such technique is disclosed in US patent 5,589,136, which describes the integration of PCR amplification and capillary electrophoresis in chips.

Integrated systems can be envisaged mainly when microfluidic systems are used. These systems comprise a pattern of microchannels designed onto a glass, silicon, quartz, or plastic wafer included on a microchip. The movements of the samples are controlled by electric, electroosmotic or hydrostatic forces applied across different areas of the microchip to create functional microscopic valves and pumps with no moving parts. Varying the voltage controls the liquid flow at intersections between the micro-machined channels and changes the liquid flow rate for pumping across different sections of the microchip.

For genotyping SNPs, the microfluidic system may integrate, for example, nucleic acid amplification, minisequencing primer extension, capillary electrophoresis, and a detection method such as laser induced fluorescence detection.

In a first step, the DNA samples are amplified, preferably by PCR. Then, the amplification products are subjected to automated minisequencing reactions using ddNTPs (specific fluorescence for each ddNTP) and the appropriate oligonucleotide minisequencing primers which hybridize just upstream of the targeted polymorphic base. Once the extension at the 3' end is completed, the primers are separated from the unincorporated fluorescent ddNTPs by capillary electrophoresis. The separation medium used in capillary electrophoresis can be, for example, polyacrylamide, polyethyleneglycol or dextran. The incorporated ddNTPs in the single nucleotide primer extension products are identified by laser-induced fluorescence detection. This microchip can be used to process at least 96 to 384 samples, or more, in parallel.

Vectors/host cells

The invention also provides vectors containing the nucleic acid molecules described herein. The term "vector" refers to a vehicle, preferably a nucleic acid molecule, that can transport the nucleic acid molecules. When the vector is a nucleic acid molecule, the nucleic acid molecules are covalently linked to the vector nucleic acid. With this aspect of the invention, the vector includes a plasmid, single or double stranded phage, a single or double stranded RNA or DNA viral vector, or artificial chromosome, such as a BAC, PAC, YAC, OR MAC.

A vector can be maintained in the host cell as an extrachromosomal element where it replicates and produces additional copies of the nucleic acid molecules. Alternatively, the vector may integrate into the host cell genome and produce additional copies of the nucleic acid molecules when the host cell replicates.

The invention provides vectors for the maintenance (cloning vectors) or vectors for expression (expression vectors) of the nucleic acid molecules. The vectors can function in procaryotic or eukaryotic cells or in both (shuttle vectors).

5 Expression vectors contain cis-acting regulatory regions that are operably linked in the vector to the nucleic acid molecules such that transcription of the nucleic acid molecules is allowed in a host cell. The nucleic acid molecules can be introduced into the host cell with a separate nucleic acid molecule capable of affecting transcription. Thus, the second nucleic acid molecule may provide a trans-acting factor interacting with the cis-regulatory control region to allow transcription of the nucleic acid molecules from the vector. Alternatively, a trans-acting
10 factor may be supplied by the host cell. Finally, a trans-acting factor can be produced from the vector itself. It is understood, however, that in some embodiments, transcription and/or translation of the nucleic acid molecules can occur in a cell-free system.

The regulatory sequence to which the nucleic acid molecules described herein can be operably linked include promoters for directing mRNA transcription. These include, but are not
15 limited to, the left promoter from bacteriophage λ , the lac, TRP, and TAC promoters from *E. coli*, the early and late promoters from SV40, the CMV immediate early promoter, the adenovirus early and late promoters, and retrovirus long-terminal repeats.

In addition to control regions that promote transcription, expression vectors may also include regions that modulate transcription, such as repressor binding sites and enhancers.
20 Examples include the SV40 enhancer, the cytomegalovirus immediate early enhancer, polyoma enhancer, adenovirus enhancers, and retrovirus LTR enhancers.

In addition to containing sites for transcription initiation and control, expression vectors can also contain sequences necessary for transcription termination and, in the transcribed region a ribosome binding site for translation. Other regulatory control elements for expression include
25 initiation and termination codons as well as polyadenylation signals. The person of ordinary skill in the art would be aware of the numerous regulatory sequences that are useful in expression vectors. Such regulatory sequences are described, for example, in Sambrook *et al.*, *Molecular Cloning: A Laboratory Manual*, 2nd. ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, (1989).

30 A variety of expression vectors can be used to express a nucleic acid molecule. Such vectors include chromosomal, episomal, and virus-derived vectors, for example vectors derived from bacterial plasmids, from bacteriophage, from yeast episomes, from yeast chromosomal elements, including yeast artificial chromosomes, from viruses such as baculoviruses,

papovaviruses such as SV40, Vaccinia viruses, adenoviruses, poxviruses, pseudorabies viruses, and retroviruses. Vectors may also be derived from combinations of these sources such as those derived from plasmid and bacteriophage genetic elements, eg. cosmids and phagemids.

Appropriate cloning and expression vectors for prokaryotic and eukaryotic hosts are described in
5 Sambrook *et al.*, *Molecular Cloning: A Laboratory Manual*. 2nd. ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, (1989).

The regulatory sequence may provide constitutive expression in one or more host cells (i.e. tissue specific) or may provide for inducible expression in one or more cell types such as by temperature, nutrient additive, or exogenous factor such as a hormone or other ligand. A variety
10 of vectors providing for constitutive and inducible expression in prokaryotic and eukaryotic hosts are well known to those of ordinary skill in the art.

The nucleic acid molecules can be inserted into the vector nucleic acid by well-known methodology. Generally, the DNA sequence that will ultimately be expressed is joined to an expression vector by cleaving the DNA sequence and the expression vector with one or more
15 restriction enzymes and then ligating the fragments together. Procedures for restriction enzyme digestion and ligation are well known to those of ordinary skill in the art.

The vector containing the appropriate nucleic acid molecule can be introduced into an appropriate host cell for propagation or expression using well-known techniques. Bacterial cells include, but are not limited to, *E. coli*, *Streptomyces*, and *Salmonella typhimurium*. Eukaryotic
20 cells include, but are not limited to, yeast, insect cells such as *Drosophila*, animal cells such as COS and CHO cells, and plant cells.

As described herein, it may be desirable to express the peptide as a fusion protein. Accordingly, the invention provides fusion vectors that allow for the production of the peptides. Fusion vectors can increase the expression of a recombinant protein, increase the solubility of
25 the recombinant protein, and aid in the purification of the protein by acting for example as a ligand for affinity purification. A proteolytic cleavage site may be introduced at the junction of the fusion moiety so that the desired peptide can ultimately be separated from the fusion moiety. Proteolytic enzymes include, but are not limited to, factor Xa, thrombin, and enterokinase. Typical fusion expression vectors include pGEX (Smith *et al.*, *Gene* 67:31-40 (1988)), pMAL
30 (New England Biolabs, Beverly, MA) and pRIT5 (Pharmacia, Piscataway, NJ) which fuse glutathione S-transferase (GST), maltose E binding protein, or protein A, respectively, to the target recombinant protein. Examples of suitable inducible non-fusion *E. coli* expression vectors include pTrc (Amann *et al.*, *Gene* 69:301-315 (1988)) and pET 11d (Studier *et al.*, *Gene Expression Technology: Methods in Enzymology* 185:60-89 (1990)).

Recombinant protein expression can be maximized in a host bacteria by providing a genetic background wherein the host cell has an impaired capacity to proteolytically cleave the recombinant protein. (Gottesman, S., *Gene Expression Technology: Methods in Enzymology* 185, Academic Press, San Diego, California (1990) 119-128). Alternatively, the sequence of
5 the nucleic acid molecule of interest can be altered to provide preferential codon usage for a specific host cell, for example *E. coli*. (Wada *et al.*, *Nucleic Acids Res.* 20:2111-2118 (1992)).

The nucleic acid molecules can also be expressed by expression vectors that are operative in yeast. Examples of vectors for expression in yeast e.g., *S. cerevisiae* include pYepSec1 (Baldari, *et al.*, *EMBO J.* 6:229-234 (1987)), pMFa (Kurjan *et al.*, *Cell* 30:933-
10 943(1982)), pJRY88 (Schultz *et al.*, *Gene* 54:113-123 (1987)), and pYES2 (Invitrogen Corporation, San Diego, CA).

The nucleic acid molecules can also be expressed in insect cells using, for example, baculovirus expression vectors. Baculovirus vectors available for expression of proteins in cultured insect cells (e.g., Sf 9 cells) include the pAc series (Smith *et al.*, *Mol. Cell Biol.* 3:2156-
15 2165 (1983)) and the pVL series (Lucklow *et al.*, *Virology* 170:31-39 (1989)).

In certain embodiments of the invention, the nucleic acid molecules described herein are expressed in mammalian cells using mammalian expression vectors. Examples of mammalian expression vectors include pCDM8 (Seed, B. *Nature* 329:840(1987)) and pMT2PC (Kaufman *et al.*, *EMBO J.* 6:187-195 (1987)).

20 The expression vectors listed herein are provided by way of example only of the well-known vectors available to those of ordinary skill in the art that would be useful to express the nucleic acid molecules. The person of ordinary skill in the art would be aware of other vectors suitable for maintenance propagation or expression of the nucleic acid molecules described herein. These are found for example in Sambrook, J., Fritsh, E. F., and Maniatis, T. *Molecular*
25 *Cloning: A Laboratory Manual*. 2nd, ed., Cold Spring Harbor Laboratory, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, 1989.

The invention also encompasses vectors in which the nucleic acid sequences described herein are cloned into the vector in reverse orientation, but operably linked to a regulatory sequence that permits transcription of antisense RNA. Thus, an antisense transcript can be
30 produced to all, or to a portion, of the nucleic acid molecule sequences described herein, including both coding and non-coding regions. Expression of this antisense RNA is subject to each of the parameters described above in relation to expression of the sense RNA (regulatory sequences, constitutive or inducible expression, tissue-specific expression).

The invention also relates to recombinant host cells containing the vectors described herein. Host cells therefore include prokaryotic cells, lower eukaryotic cells such as yeast, other eukaryotic cells such as insect cells, and higher eukaryotic cells such as mammalian cells.

5 The recombinant host cells are prepared by introducing the vector constructs described herein into the cells by techniques readily available to the person of ordinary skill in the art. These include, but are not limited to, calcium phosphate transfection, DEAE-dextran-mediated transfection, cationic lipid-mediated transfection, electroporation, transduction, infection, lipofection, and other techniques such as those found in Sambrook, *et al.* (*Molecular Cloning: A Laboratory Manual*, 2nd, ed., Cold Spring Harbor Laboratory, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, 1989).

10 Host cells can contain more than one vector. Thus, different nucleotide sequences can be introduced on different vectors of the same cell. Similarly, the nucleic acid molecules can be introduced either alone or with other nucleic acid molecules that are not related to the nucleic acid molecules such as those providing trans-acting factors for expression vectors. When more than one vector is introduced into a cell, the vectors can be introduced independently, co-introduced or joined to the nucleic acid molecule vector.

15 In the case of bacteriophage and viral vectors, these can be introduced into cells as packaged or encapsulated virus by standard procedures for infection and transduction. Viral vectors can be replication-competent or replication-defective. In the case in which viral replication is defective, replication will occur in host cells providing functions that complement the defects.

20 Vectors generally include selectable markers that enable the selection of the subpopulation of cells that contain the recombinant vector constructs. The marker can be contained in the same vector that contains the nucleic acid molecules described herein or may be on a separate vector. Markers include tetracycline or ampicillin-resistance genes for prokaryotic host cells and dihydrofolate reductase or neomycin resistance for eukaryotic host cells. However, any marker that provides selection for a phenotypic trait will be effective.

25 While the mature proteins can be produced in bacteria, yeast, mammalian cells, and other cells under the control of the appropriate regulatory sequences, cell-free transcription and translation systems can also be used to produce these proteins using RNA derived from the DNA constructs described herein.

30 Where secretion of the peptide is desired, which is difficult to achieve with multi-transmembrane domain containing proteins such as estrogen receptors, appropriate secretion

signals are incorporated into the vector. The signal sequence can be endogenous to the peptides or heterologous to these peptides.

Where the peptide is not secreted into the medium, which is typically the case with estrogen receptors, the protein can be isolated from the host cell by standard disruption procedures, including freeze thaw, sonication, mechanical disruption, use of lysing agents and the like. The peptide can then be recovered and purified by well-known purification methods including ammonium sulfate precipitation, acid extraction, anion or cationic exchange chromatography, phosphocellulose chromatography, hydrophobic-interaction chromatography, affinity chromatography, hydroxylapatite chromatography, lectin chromatography, or high performance liquid chromatography.

It is also understood that depending upon the host cell in recombinant production of the peptides described herein, the peptides can have various glycosylation patterns, depending upon the cell, or maybe non-glycosylated as when produced in bacteria. In addition, the peptides may include an initial modified methionine in some cases as a result of a host-mediated process.

Uses of vectors and host cells

The recombinant host cells expressing the peptides described herein have a variety of uses. First, the cells are useful for producing a estrogen receptor protein or peptide that can be further purified to produce desired amounts of estrogen receptor protein or fragments. Thus, host cells containing expression vectors are useful for peptide production.

Host cells are also useful for conducting cell-based assays involving the estrogen receptor protein or estrogen receptor protein fragments, such as those described above as well as other formats known in the art. Thus, a recombinant host cell expressing a native estrogen receptor protein is useful for assaying compounds that stimulate or inhibit estrogen receptor protein function.

Host cells are also useful for identifying estrogen receptor protein mutants in which these functions are affected. If the mutants naturally occur and give rise to a pathology, host cells containing the mutations are useful to assay compounds that have a desired effect on the mutant estrogen receptor protein (for example, stimulating or inhibiting function) which may not be indicated by their effect on the native estrogen receptor protein.

Genetically engineered host cells can be further used to produce non-human transgenic animals. A transgenic animal is preferably a mammal, for example a rodent, such as a rat or mouse, in which one or more of the cells of the animal include a transgene. A transgene is exogenous DNA which is integrated into the genome of a cell from which a transgenic animal

develops and which remains in the genome of the mature animal in one or more cell types or tissues of the transgenic animal. These animals are useful for studying the function of a estrogen receptor protein and identifying and evaluating modulators of estrogen receptor protein activity. Other examples of transgenic animals include non-human primates, sheep, dogs, cows, goats, chickens, and amphibians.

A transgenic animal can be produced by introducing nucleic acid into the male pronuclei of a fertilized oocyte, e.g., by microinjection, retroviral infection, and allowing the oocyte to develop in a pseudopregnant female foster animal. Any of the estrogen receptor protein nucleotide sequences can be introduced as a transgene into the genome of a non-human animal, such as a mouse.

Any of the regulatory or other sequences useful in expression vectors can form part of the transgenic sequence. This includes intronic sequences and polyadenylation signals, if not already included. A tissue-specific regulatory sequence(s) can be operably linked to the transgene to direct expression of the estrogen receptor protein to particular cells.

Methods for generating transgenic animals via embryo manipulation and microinjection, particularly animals such as mice, have become conventional in the art and are described, for example, in U.S. Patent Nos. 4,736,866 and 4,870,009, both by Leder *et al.*, U.S. Patent No. 4,873,191 by Wagner *et al.* and in Hogan, B., *Manipulating the Mouse Embryo*, (Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y., 1986). Similar methods are used for production of other transgenic animals. A transgenic founder animal can be identified based upon the presence of the transgene in its genome and/or expression of transgenic mRNA in tissues or cells of the animals. A transgenic founder animal can then be used to breed additional animals carrying the transgene. Moreover, transgenic animals carrying a transgene can further be bred to other transgenic animals carrying other transgenes. A transgenic animal also includes animals in which the entire animal or tissues in the animal have been produced using the homologously recombinant host cells described herein.

In another embodiment, transgenic non-human animals can be produced which contain selected systems which allow for regulated expression of the transgene. One example of such a system is the *cre/loxP* recombinase system of bacteriophage P1. For a description of the *cre/loxP* recombinase system, see, e.g., Lakso *et al.* *PNAS* 89:6232-6236 (1992). Another example of a recombinase system is the FLP recombinase system of *S. cerevisiae* (O'Gorman *et al.* *Science* 251:1351-1355 (1991). If a *cre/loxP* recombinase system is used to regulate expression of the transgene, animals containing transgenes encoding both the *Cre* recombinase and a selected protein is required. Such animals can be provided through the construction of

"double" transgenic animals, e.g., by mating two transgenic animals, one containing a transgene encoding a selected protein and the other containing a transgene encoding a recombinase.

Clones of the non-human transgenic animals described herein can also be produced according to the methods described in Wilmut, I. *et al. Nature* 385:810-813 (1997) and PCT International Publication Nos. WO 97/07668 and WO 97/07669. In brief, a cell, e.g., a somatic cell, from the transgenic animal can be isolated and induced to exit the growth cycle and enter G₀ phase. The quiescent cell can then be fused, e.g., through the use of electrical pulses, to an enucleated oocyte from an animal of the same species from which the quiescent cell is isolated. The reconstructed oocyte is then cultured such that it develops to morula or blastocyst and then transferred to pseudopregnant female foster animal. The offspring born of this female foster animal will be a clone of the animal from which the cell, e.g., the somatic cell, is isolated.

Transgenic animals containing recombinant cells that express the peptides described herein are useful to conduct the assays described herein in an *in vivo* context. Accordingly, the various physiological factors that are present *in vivo* and that could effect ligand binding, estrogen receptor protein activation, and signal transduction, may not be evident from *in vitro* cell-free or cell-based assays. Accordingly, it is useful to provide non-human transgenic animals to assay *in vivo* estrogen receptor protein function, including ligand interaction, the effect of specific mutant estrogen receptor protein on estrogen receptor protein function and ligand interaction, and the effect of chimeric estrogen receptor protein. It is also possible to assess the effect of null mutations, that is mutations that substantially or completely eliminate one or more estrogen receptor protein functions.

EXAMPLES:

1. SNP Identification and Characterization

Individual exons of ESR1 were PCR amplified using primers flanking each adjacent sequence of exon (exon/intron boundaries), and the sequence of amplified fragments was analyzed. As the PCR template, genomic DNA from Coriell Diversity Panels (10 individuals in each of 5 ethnic groups) (see Figure 2 (b)), and/or Liverpool clinical breast tumor and matching blood samples (from tissue obtained in Liverpool, England, see Figure 2 (a)) (48 patients) was used. PolyPhred version 2.0 (D. A. Nickerson, S. Taylor, N. Kolker, Univ. of Washington, 1998) was run on the sequences (with default settings) to visualize potential heterozygotes. Tagged sites were examined for quality to verify polymorphisms.

36 SNPs with a frequency greater than 2 and a quality score greater than 20 were found with 13 being unique to the clinical samples. 15 of the SNPs showed at least one

instance of a change in heterozygosity in the clinical samples, and 4 showed at least one instance of a loss in heterozygosity. For the analysis, PCR primers were used for SNP identification and detection (see Figure 2 (d)).

Additionally, the primer set in Figure 2(c) and M13 primers were used for overlapping PCR and clone sequencing.

Table 1. Summary of SNPs found in the clinical samples. All SNPs had a frequency greater than 2 and a quality score greater than 20 (see Figure 8).

Number of SNPs	39
Number in Liverpool	34
Number in Coriell	26
Number unique to Coriell	5
Number unique in Liverpool	12

Table 2: Summary of changes in heterozygosity in clinical samples. SNPs had a frequency greater than two and a quality score greater than 20 (See Figure 8).

Number of Liverpool SNPs With >1 Change in Heterozygosity	15
Number of Liverpool SNPs With >1 case of Loss of Heterozygosity	4

Figure 5 shows the domain structure of the ESR1 protein and the position of many of the SNPs disclosed herein. Figure 6 provides a graphical representation of the SNPs and frequency of occurrence in the samples tested.

Figure 8 (a) shows the SNPs and frequency of occurrence in Coriell Samples wherein the samples are collected from Northern European, Chinese, Indo-Pakistani, Africa American and Southwestern Native American ethnic groups. In 3' flanking Exon 8, the positions of the SNPs are based on the sequence of AL078582 that is in Genbank. The result can be used for detection purposes among the specific ethnic groups. Figure 8 (b) shows the SNPs and frequency of occurrence in Liverpool samples wherein the samples are selected from the groups of blood samples and breast cancer samples.

2. Haplotype Analysis

The method developed for SNP discovery was designed to recover haplotype data. SNPs could be associated into a specific haplotype. The sample cDNA was from a random population present in unknown proportions. SNPs coming from a specific clone were clustered and built into haplotypes.

Data consist of two sample types. Liverpool samples are from 48 patients, and each patient had a tumor and blood sample typed. Coriell samples were controls, but they were not matched controls. Rather they included a mix of Europeans, Chinese, Indo-Pakistani, and African Americans. 46 SNPs in ESR1 were scored in the Liverpool samples. The same 46 SNPs plus an additional 6 SNPs 3' of the RSR1 gene were scored in the Coriell sample.

These data were subjected to an analysis to infer the most likely haplotype phase of the individuals. The results appear in Figure 4 (a) where each haplotype has a number and the number after the dash is a count (or frequency) of that haplotype.

Figure 4 (b) is the non-singleton haplotype data that were fitted to a neighbor-joining tree. If a tree were cut at the arrow, the clade including 3L, 10-4, ... 73L would be partitioned from the rest of the tree, as "Clade X". The following table will illustrate a difference in the incidence of tumors in haplotypes on Clade X vs. the rest of the tree. The incidence of each haplotype was first counted by adding the numbers after the dashes, wherein L represented the tumorous Liverpool samples and the non-L represented Coriell controls.

	<u>Clade X</u>	<u>Rest of tree</u>
Tumor	49	64
Control	4	49

A chi-square was calculated based on the 2 x2 table as of 21.29, which, with one degree of freedom that has a probability less than 0.0001. Therefore, the Clade X of the ER1 gene has a much greater chance of being associated with a tumor. This entire clade is so rare elsewhere in the world. Even among Europeans, it was present only once out of 20 haplotypes.

Figure 4 (c) was a reconstructed haplotypes cladogram which indicated a subset of SNPs in ER1 that preserve the property of having clades highly enriched in the tumor samples or the control.

The topmost clade (38L-3 and above) has a count(frequency) of 27 in the Liverpool sample and 2 in the controls. The remainder of the tree has a count of 44 in Liverpool and 54 in Coriell. This 2 x 2 table has a chi-square of 21.095 and $P < 0.0005$. Thus, these 10 SNPs capture most of the informative discriminating alleles in the original 46 SNPs.

5 The 10 sites that were identified as showing nucleotide frequency differences between Coriell controls and Liverpool are:

	5	ESR1-exon 1A170487	
	9	ESR1-exon 1C167989	
	11	ESR1-exon 1E64331	
10	17	ESR1-exon Intrn 3	243187
	20	ESR1-exon 4	306382
	24	ESR1-exon Intrn 6	423220
	28	ESR1-exon Intrn 7	460564
	29	ESR1-exon 8	460929
15	35	ESR1-exon 8	461968
	45	ESR1-exon 8	54404

3. ESR1 Genomic Sequencing- The Complete Genomic Structure of Estrogen

Receptor alpha

20 Estrogen receptor (ER) is a member of the nuclear hormone receptor gene superfamily. This family of genes is characterized by a modular structure with three distinct domains: a variable (N)-terminal domain, a highly conserved DNA binding domain, and a conserved (C)-terminal domain (reviewed in 1, 2). Functionally, the (N)-terminus domain regulates transactivation, the DNA binding domain regulates dimerization and DNA binding,

25 and the (C)-terminus domain regulates transactivation, dimerization, ligand binding, nuclear translocation, silencing, and Heat Shock Protein binding. It was shown that the functions of the individual domains of the nuclear hormone gene superfamily are independent of the receptor in which they are found, and that the domains retain their function even when placed into different heterologous proteins (3,4,5). The domain modularity in the nuclear hormone

30 receptor gene superfamily exists because the major subfamilies of these genes evolved through a simple gene duplication early in evolution (6). The nuclear hormone receptor gene family can be separated according to two different classification schemes, one based on hormone binding, the other based on dimerization and how the receptors bind to their respective DNA response elements (for a review, see 2).

The cDNA for ER α was first cloned and sequenced from the MCF-7 breast cancer cell line and was found to have 27% identity and 41% conservation to the v-erb-A gene (7). ER α was mapped to chromosome 6q25.1 using Fluorescence In Situ Hybridization (FISH) and chromosome banding (8). In 1996, a novel estrogen receptor (ER β) was identified by degenerate PCR (9) and mapped to 14q22-24 by FISH (10). ER α and ER β were shown to have 96% sequence identity in the DNA binding domain, 58% identity in the ligand-binding domain, and low similarity in the 5' and 3' ends as well as in the hinge (domain D). A variety of ER α and ER β variants have since been described, including single and multiple exon deletions, truncated transcripts, and transcripts containing insertions (11,12,13). These variants were isolated from a variety of sources, including normal tissues, tumor tissues and cell lines. The ER status of tumors in breast cancer patients has been used as an indicator of response to endocrine therapy (14,15), and many studies have examined the role of ER in breast cancer tumor progression, ER-negative status, and hormone antagonist resistance (for a complete review, see 16).

Because of the importance of the ER gene, we set about to clone it in its entirety and determine its complete structure. Initially, we used standard Bacterial Artificial Chromosome (BAC) sequencing to generate sequence information for the coding regions of the genes. As Celera's sequencing of the human genome progressed, the remaining regions of ER were filled in using Celera regional assemblies. A small region of less than 25 kb was filled in on ER α using a public BAC (AI353611.6, positions 1,497-25,941)

Materials and Methods

1) BAC Screening

Appropriate markers were designed for ER α and ER β exons and used to obtain commercially available BAC clones from Research Genetics (Huntsville, AL). A number of positive BACs were selected and individual clones were re-screened for verification.

2) DNA Isolation and Library Preparation

BAC DNA was isolated from verified clones using QIAGEN columns (QIAGEN, Inc., Valencia, CA) according to the manufacturer's specifications. Shotgun libraries were prepared following standard protocols (17). Briefly, isolated BAC DNA was sonicated, polished, and size fractionated. Size selected DNA fragments were then subcloned into pUC19 using standard ligation techniques. Ligated DNA was transformed into Electrocompetent cells (Life Technologies, Rockville, MD) and grown overnight.

3) DNA Sequencing and Annotation

Sequencing reactions were performed using Big Dye Terminator chemistry (Applied Biosystems, Foster City, CA) and run on an ABI PRISM 3700 DNA Analyzer (Applied Biosystems). Phred (18), Phrap and Consed (19) were used for base calling, assembly, and finishing, respectively. Exon locations were determined using Cross_Match to compare the published gene sequences to the genomic contig.

Results

1. Estrogen Receptor α

Alignment of the genomic sequence for ER α and published mRNA sequences for ER α show the gene consists of 14 exons and covers 446,296 bp of genomic sequence (Figure 7, Table 3).

2. Estrogen Receptor β

Alignment of the genomic sequence for ER β and published mRNA sequences for ER β show the gene consists of 17 exons and covers 253,748 bp of genomic sequence (figure 2, table 1). By analysis with the Celera Genome Browser, we were able to identify a gene, human synaptic nuclei expressed gene 2 (syne-2, accession number NM_015180.1), that is completely contained within intron 9 of ER β , on the opposite strand. Further analysis of the syne-2 gene showed it consists of 21 exons, and covers 51,471 bp of genomic sequence.

Discussion

Alignment of the complete ER α genomic sequence and various ER β transcripts shows that the gene covers 446,296 bp of genomic sequence and consists of 14 exons. The alignment of the published sequence for exon 1E (AJ002561) (20) and the ER α genomic sequence revealed that exon 1E actually consists of two separate exons. The newly delineated exon is referred to here as exon 1G to conform to the naming convention previously established. Exon 1G is located approximately 45 kb upstream of exon 1E and conforms to the GT/AG splice site consensus sequence (Figure 1, table 1).

Alignment of the various ER β transcripts to the complete ER β genomic sequence reveals a more complex organization than was previously accepted (13). The 5' UTR of the ER β cx variant (AB006589) actually consists of seven untranslated exons (referred to here as exons -1 through -7), all of which conform to the GT/AG splice site consensus sequence (figure 2, table 1). Sequence alignment of ER β variants AF061055 and AF061054 (12) showed that these transcripts both contain intron sequence and were probably partially mature transcripts. Both of these partially mature transcripts contain exon 7 and a portion of exon 9,

but do not conform to the splice site consensus sequence at the sites where intron sequence is present.

By examining the ER genomic sequences using the Celera Genome Browser, we were able to identify a separate gene contained entirely within intron 9 of ER β . This gene was identified as human synaptic nuclei expressed gene 2 (syne-2) and was shown to cover over 50 Kb of genomic sequence and consist of 21 exons, all of which conform to the GT/AG splice site consensus sequence (Table 4). The syne-2 gene is located on the antisense strand of ER β .

Completion of the sequence and structures for ER α and ER β should contribute to further understanding and characterization of these important receptors.

Table 3: Exon-Intron Boundaries and Locations in the Human Estrogen Receptor: Exon sequences are shown in upper case and intron sequences are shown in lower case. Splice sites are shown in bold.

Gene	Exon no.	Splice variant	Contig start	Contig end	5' splice donor	3' splice acceptor	Exon Size (bp)	Intron size (Kb)
ER1	1G	AJ002561	18941	19032	-	ACCAAAGAAGgtaagttttt	91	33.79
	1F	AJ002562	52818	52940	-	TTCTCTTCAAgtaggtactc	122	11.21
	1E	AJ002561	64150	64280	aaaacaaaagGAAGAAGAAA	CATCACTGAGgtagtggtga	130	101.95
	1D	AJ002560	166228	166322	-	GAGAGAGCCAgtaagtcacg	94	1.68
	1C	X62462	168002	168120	-	ATCCAGCAGGgtaggcttgt	118	1.55
	1B	AJ002559	169674	169825	-	GACAAGTAAAgtaaagttca	151	0.04
	1A	X03635	169867	170678	-	CATTCTACAGgtacccgcgc	811	34.23
	2	X03635	204912	205102	ttccccccagGCCAAATTCA	AGTATTCAAGgtaatatgtgt	190	37.87
	3	X03635	242970	243086	cttttaataagGACATAACGA	ATGAAAGGTGgtaggtacat	116	63.08
	4	X03635	306168	306503	gtgttttcagGGATACGAAA	AGGGTGCCAGgtaagaatgc	335	67.14
	5	X03635	373640	373778	ttgttttcagGCTTTGTGGA	TCTTGACAGgtaagtgacc	138	49.19
	6	X03635	422964	423097	gttttcataagGAACAGGGA	CTAATTCTGgtgagttgat	133	33.26
	7	X03635	456354	456537	gcgcattcagGAGTGTACAC	GGCACATGAGgtgaggcatc	183	4.16
	8	X03635	460701	465237	ccacctacagTAACAAAGGC	-	4536	-
ER2	-7	AB006589	49552	49750	-	GGTCTGAAGgtgcgtggtt	198	1.18
	-6	AB006589	50928	51235	tgctcttagACATCCAAGT	TGTTTGTAAGgtaataaaaa	307	32.62
	-5	AB006589	83858	84041	tatccactagAGGGAGACAT	GAGAACACAGgtgaacttca	183	1.90
	-4	AB006589	85942	86154	ctctccatagAAATCCTGGG	ATTAGCCCTGgtaaggagct	212	2.88
	-3	AB006589	89037	89130	cattcaacagTATCTGGGCT	GTGCAGGTAGgtaggtaaag	93	0.67
	-2	AB006589	89803	89988	ccttttcacagGGTTTGTGTT	GTGTTGACAGgtaagatgag	185	3.12
	-1	AF060555	93111	93488	-	TATCTGCAAGgtaagcgccc	377	10.96
	1	AF060555	104446	104897	ttcttttcacagCCATTATACT	CTGTAAACAGgtaagtcacag	451	2.47
	2	AF060555	107368	107540	tgctccctagAGAGACTG	AGCATTCAGgtacaagaga	172	11.07
	3	AF060555	118610	118726	tctgctatagGACATAATGA	GTGAAGTGTgtagtgctt	116	8.05
	4	AF060555	126774	127073	tcctcttcagGCTCCCGGAG	AAGATTCCCGgtaggcctt	299	3.09
	5	AF060555	130158	130296	ctttcccccagGCTTTGTGGA	TTCTGGACAGgtgagaaaaa	138	7.56
	6	AF060555	137853	137986	actttttgtagGGATGAGGGG	CTCAATTCCAgtaaagtaatc	133	14.39
	7	AF060555	152379	152559	ctttgtccagGTATGTACCC	GGCATGCGAGgtacgcgccc	180	1.65
	8	X99101	154206	154500	gtcccccatagTAACAAGGGC	-	826	5.42
	9	AB006589	159915	160827	tctacttaagGGCAGAAAAG	-	912	141.65
	10	AF060555	302474	303300	gtcttgacagCTCTCTCTCA	-	826	-

Table 4: Exon-Intron Boundaries and Locations in the Human Synaptic Nuclei Expressed Gene 2. Exon sequences are shown in upper case and intron sequences are shown in lower case. Splice sites are shown in bold.

Gene	Exon no.	Splice variant	Contig start	Contig end	5' splice donor	3' splice acceptor	Exon Size (bp)	Intron size (Kb)
Syne-2	1	NM_015180	212563	212391	--	CACTGTAGAGgtaaactcac	172	2.22
	2	NM_015180	210175	210044	tttcaaatagACCTGGGACC	GCTGATTAAGgtattgaaat	131	8.94
	3	NM_015180	201109	200946	ttaaattgcagGAACTAGAAC	CTGCTTAAGGgtaagtcagc	163	1.97
	4	NM_015180	198981	198819	tcatttgcagGTGGCCATAC	GTTACAGAAgtaagggagg	162	1.36
	5	NM_015180	197462	197290	cctttgccagGACTGCATGG	TCGGATCAAGgtaagaaatg	172	12.56
	6	NM_015180	184732	184564	atatgtgtagGGTGAAGAAG	TGAGCAGCAGgtgggacaat	168	5.79
	7	NM_015180	178777	178584	gtaatcacagGATCTACAGC	GGCGCATGAagtaagaacta	193	0.48
	8	NM_015180	178101	177949	ctcccatcagAATCGAGGAG	GAGGTTTGAagtaaacacct	152	0.36
	9	NM_015180	177591	177405	tgtgatgcagGCCTTTCAGC	GAGACTCAGGgtgagctcct	186	1.84
	10	NM_015180	175570	175429	acttttgcagCATTTACCA	CCAAGTGAATgtgagggctg	141	0.71
	11	NM_015180	174718	174522	ctctcaacagGGCTTCCAAC	CTGCACTCCGgtacgggcac	196	1.19
	12	NM_015180	173337	173051	tgtggttttagGGCTTGAAG	GCACTGTCAGgtaacagctg	286	1.76
	13	NM_015180	171289	171140	ttcgtttcagGTAATCCAT	ACCACCCTATgtaagtctta	149	2.00
	14	NM_015180	169139	169013	ctcattctagGGAAAGCTAC	CAGCAGTCAGgtactgcctg	126	0.69
	15	NM_015180	168327	168117	ttaattccagGTGCCTTCGA	GAGACTGCAGgtgagttaga	210	1.02
	16	NM_015180	167096	166890	tctctggtagGAGATACTGA	GCACTGCCAGgtacgctgac	206	0.93
	17	NM_015180	165957	165825	gttttttaagGACTTCCACC	GGAAGTAATGgtaagtttcc	132	1.48
	18	NM_015180	164342	164149	ctgttttcagCAACTGGAAG	GGGAACCCAGgtgagcttac	193	1.08
	19	NM_015180	163074	162982	tgaatttcagAACCCAGCCT	CCGAGCAAAGgtaagaagcc	92	0.45
	20	NM_015180	162537	162482	ctttaccagCAGTTCAGAG	CAGAGAGCAGgtaacggggc	55	0.27
	21	NM_015180	162214	161092	ctgttggcagGGTCCCCGGC	--	1122	-

References

1. Ribeiro RC, Kushner PJ, Baxter JD, Tenbaum S, Baniahmad A. The nuclear hormone receptor gene superfamily. *Annu Rev Med* 1995;46:443-53.
2. Tenbaum S, Baniahmad A. Nuclear receptors: structure, function and involvement in disease. *Int J Biochem Cell Biol*. 1997 Dec;29(12):1325-41.
3. Baniahmad C, Baniahmad A, O'Malley BW. A rapid method combining a functional test of fusion proteins in vivo and their purification. *Biotechniques*. 1994 Feb;16(2):194-6.
4. Parker MG, White R. Nuclear receptors spring into action. *Nat Struct Biol*. 1996 Feb;3(2):113-5.
5. Schwabe JW. Transcriptional control: how nuclear receptors get turned on. *Curr Biol*. 1996 Apr 1;6(4):372-4.
6. Laudet V, Hanni C, Coll J, Catzeflis F, Stehelin D. Evolution of the nuclear receptor gene superfamily. *EMBO J*. 1992 Mar;11(3):1003-13.
7. Green S, Walter P, Kumar V, Krust A, Bornert JM, Argos P, Chambon P. Human oestrogen receptor cDNA: sequence, expression and homology to v-erb-A. *Nature*. 1986 Mar 13-19;320(6058):134-9.

8. Menasce LP, White GR, Harrison CJ, Boyle JM. Localization of the estrogen receptor locus (ESR) to chromosome 6q25.1 by FISH and a simple post-FISH banding technique. *Genomics* 1993 Jul;17(1):263-5.

5 9. Mosselman S, Polman J, Dijkema R. ER beta: identification and characterization of a novel human estrogen receptor. *FEBS Lett.* 1996 Aug 19;392(1):49-53.

10. Enmark E, Peltö-Huikko M, Grandien K, Lagercrantz S, Lagercrantz J, Fried G, Nordenskjöld M, Gustafsson JA. Human estrogen receptor beta-gene structure, chromosomal localization, and expression pattern. *J Clin Endocrinol Metab.* 1997 Dec;82(12):4258-65.

10 11. Murphy LC, Dotzlaw H, Leygue E, Douglas D, Coutts A, Watson PH. Estrogen receptor variants and mutations. *J Steroid Biochem Mol Biol.* 1997 Aug;62(5-6):363-72.

12. Moore JT, McKee DD, Slentz-Kesler K, Moore LB, Jones SA, Horne EL, Su JL, Kliewer SA, Lehmann JM, Willson TM. Cloning and characterization of human estrogen receptor beta isoforms. *Biochem Biophys Res Commun.* 1998 Jun 9;247(1):75-8.

15 13. Ogawa S, Inoue S, Watanabe T, Orimo A, Hosoi T, Ouchi Y, Muramatsu M. Molecular cloning and characterization of human estrogen receptor beta: a potential inhibitor of estrogen action in human. *Nucleic Acids Res.* 1998 Aug 1;26(15):3505-12.

14. Osborne CK, Yochmowitz MG, Knight WA 3d, McGuire WL. The value of estrogen and progesterone receptors in the treatment of breast cancer. *Cancer* 1980 Dec 15;46(12 Suppl):2884-8.

20 15. DeSombre ER, Carbone PP, Jensen EV, McGuire WL, Wells SA Jr, Wittliff JL, Lipsett M Special report. Steroid receptors in breast cancer. *N Engl J Med* 1979 Nov 1;301(18):1011-2.

16. Parl, Fritz F., Estrogens, Estrogen receptor, and Breast Cancer. IOS Press, Amsterdam, Netherlands, 2000.

25 17. Birren B, Green ED, Klapholz S, Myers, R, Riethman H, Roskams J, (eds.) (1997), *Genome Analysis: A Laboratory Manual*. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

18. Ewing B, Hillier L, Wendl MC, Green P. Base-calling of automated sequencer traces using phred. I. Accuracy assessment. *Genome Res* 1998 Mar;8(3):175-85.

30 19. Gordon D, Abajian C, Green P. Consed: a graphical tool for sequence finishing. *Genome Res* 1998 Mar;8(3):195-202.

20. Flouriot G, Griffin C, Kenealy M, Sonntag-Buck V, Gannon F. Differentially expressed messenger RNA isoforms of the human estrogen receptor-alpha gene are generated by alternative splicing and promoter usage. *Mol Endocrinol* 1998 Dec;12(12):1939-54.

All publications and patents mentioned in the above specification are herein incorporated by reference. Various modifications and variations of the described method and system of the invention will be apparent to those skilled in the art without departing from the scope and spirit of the invention. Although the invention has been described in connection with specific preferred embodiments, it should be understood that the invention as claimed should not be unduly limited to such specific embodiments. Indeed, various modifications of the above-described modes for carrying out the invention which are obvious to those skilled in the field of molecular biology or related fields are intended to be within the scope of the following claims.

Claims

That which is claimed is:

1. An isolated peptide consisting of an amino acid sequence selected from the group consisting of:
 - (a) the amino acid sequence of a variant estrogen receptor protein provided in Figure 2;
 - (b) a fragment of the amino acid sequence of a variant estrogen receptor protein provided in Figure 2, wherein the fragment comprises at least 10 contiguous amino acids.
2. An isolated peptide comprising an amino acid sequence selected from the group consisting of:
 - (a) the amino acid sequence of a variant estrogen receptor protein provided in Figure 2;
 - (b) a fragment of the amino acid sequence of a variant estrogen receptor protein provided in Figure 2, wherein the fragment comprises at least 10 contiguous amino acids.
3. An isolated antibody that selectively binds to a peptide of claim 1.
4. An isolated nucleic acid molecule consisting of a nucleotide sequence selected from the group consisting of:
 - (a) a nucleotide sequence that encodes the amino acid sequence of a variant estrogen receptor protein provided in Figure 2;
 - (b) a nucleotide sequence that encodes a fragment of the amino acid sequence of a variant estrogen receptor protein provided in Figure 2; and
 - (c) a nucleic acid molecule that is the complement of a nucleic acid molecule of (a)-(b).
5. An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:
 - (a) a nucleotide sequence that encodes the amino acid sequence of a variant estrogen receptor protein provided in Figure 2;

(b) a nucleotide sequence that encodes a fragment of the amino acid sequence of a variant estrogen receptor protein provided in Figure 2; and

(c) a nucleic acid molecule that is the complement of a nucleic acid molecule of (a)-(b).

6. A nucleic acid vector comprising the nucleic acid sequences of claim 4.
7. A nucleic acid vector comprising the nucleic acid sequences of claim 5.
8. A host cell containing the vector of claim 6.
9. A host cell containing the vector of claim 7.
10. A method for producing any of the peptides of claim 1 comprising introducing a nucleotide sequence encoding any of the peptide sequences in (a)-(b) into a host cell, and culturing the host cell under conditions in which the proteins are expressed from the nucleic acid.
11. A method for producing any of the peptides of claim 2 comprising introducing a nucleotide sequence encoding any of the peptide sequences in (a)-(b) into a host cell, and culturing the host cell under conditions in which the proteins are expressed from the nucleic acid.
12. A method for detecting the presence of any of the peptides of claim 1 in a sample, said method comprising contacting said sample with an agent that specifically allows detection of the presence of the peptide in the sample and then detecting the presence of the peptide.
13. A kit comprising reagents used for the method of claim 12, wherein the reagents comprise an agent that specifically binds to said peptide.
14. A method for detecting the presence of a nucleic acid sequence of claim 4 in a sample, the method comprising contacting the sample with an oligonucleotide that hybridizes to

the nucleic acid sequences under stringent conditions and determining whether the oligonucleotide binds to the nucleic acid sequence in the sample.

15. A kit comprising reagents used for the method of claim 14, wherein the reagents comprise a compound that hybridizes under stringent conditions to any of the nucleic acid molecules.

16. A method for identifying an agent that binds to any of the peptides of claim 1, said method comprising contacting the peptide with an agent and assaying the contacted mixture to determine whether a complex is formed with the agent bound to the peptide.

17. A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor comprising the step of analyzing nucleic acid molecules isolated from said individual for alterations in the estrogen receptor gene sequence, wherein an alteration in said estrogen receptor gene selected from the group consisting of the variants provided in Figure 2 and Figure 4 identifies an individual as having or at risk of developing said bone disorder.

(SEQ ID NO: 1):

Figure 1: Human Genomic DNA for estrogen receptor alpha.

[illegible]

2/139

ACAACCAGCTGTTATTTTATGGTAGAACATAAGTATCTCTTTTCATTGCCATTCTTCACTAAAAGGATAC
TTTGTCCCCCTTTTCTTTTCCATAGGTTATTGGGGTACAGGTGGTGTGGTTATATGAGTAAGTTCT
TTAGTGGTGATTTGTGAGATTTTGGTCCACCCATCACCTGAGCAGTATACACTGCACCCATTTTGCAGTA
TTTTATTCTTGGCCCCCTCCAACCTTCCCTCCAAATCCCCAACTCCTTTGTATCATTTTATGCCTTTG
CATCCTCATAGCTTAGCTCCCATATAACAGTAGGAACATATGATGTTTGTTCATTCTCTCTTTTATAG
TCACTTAGAATAATAGTCTCCAATCTCATCCAGGTCACTGCGAATGCCGTTAATTCTCTCTCTTTTATAG
CTGAGTAGTAATCCCTAGTATATATATACTACAGAATCTTTATCCACTCATTGATTGATGGGCATTGGG
TTGGTTCACGATTTTGCAATTGTGAATTGTGCCATATAAACATGCGTGTGCAAGTATCTTTTGTAT
AATGACTTATTTTCTCTGAGTAGATACCCAGTAGTGGGATTGCTGGATCAAAATGGTAGTTCTACTTTTG
GTTCTTTAAGGAATCTCCACGCTCTTTTCCATAGCGGTTGTACTAGTTTACATTCCTATCAGCAATGTAG
AAGTGTCCCTGATCACCACATCCACGTCAACATCTACTGTTTTTGTATTTTGTATTTGATTTGCGGTTTTT
ACAGGAGTAAGGTGGTATGGCATTGCGGTTTTGATTTGCAATTGCCCTGATCATAGTGTGTTGAGCATT
TTTTTTTGAATGTTCTTGGCCATTTGTATATCTCTTTTGAAGATTGTCTATTTCATGTCTTAGCCAC
TTTTCTGAAGGATTTTAAATTTGCTGATTTGTTGAGTTAATTGTAGATTTTGGATATTAGTCTTTTG
TCAGATGTATAGATTGTGAGGATTTCTCCCATCTGTGGGTTGTCTGTTTACTCTGCTGACTGTTCTTT
TTGCGGTGCAAAAGCTCTTTAGTTTAAATAGGTCCCGCTATTATCTTTGTTTTTATTGAATTTGCTTT
TGGGTTCTTGGTCAATGAATCCTTGCCCTAAGCCAATGTCTAGAAGGGTTTTTCCAGTGTATCTCTCTAGA
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GAATCCAGTTTCATTCTCCTACATTCGGCTAGCCAATTATCCAGCACCATTGTTTCAAAAGGGTGTCT
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TGGCTATGCAGGCTTTTTTGGGTTCCGTATGAGTTTGAATTTGTGCTCTTCAAGTTCTGTGAAGAATGG
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TTTCTTGTACAGATTCTTCCCTCCTTGGTATAGTATATCTTAAAGCATTATTTTCTATCTTTTGCAG
CTATCATAAAAGAGGTTGAGTTCTTGAATTTCTAGCTTGGTCACTGTTGGTGTATAGAAGAGCTAC
TGATTTGTGTACATTAATCTGTATCCGAACTTTGCTGAATCTTTTATCAGTCTTAGGAGCTTTCTGG
AGGAGTCTTTAGGGTTTTTGGGTAACAATCATATTGTACGAAACAGCGACAATTCACCTCCTCTTC
GTCAATTTGGATGCCCTTTATTTCTTCTTGTCTGTTTGTCTAGCTAGGATTTCCACTACTATGTTG
AAGAGGAGTGGTGAATGGCCATCTTGTCTTGTTCAGTTCTCAGAGGGAATCCTTCAACTTTTCCC
CATTTCAGTATTATGTTGCCGTGGGTTTGTCTATATATGGCTTTTATTATATTGAGGTATGTCCCTTGAAT
GATGATTTTGTCTGAGAGTTTTTATCATAAAGGGATCTGGATTTTGTCAAAATGCTTTTCTGCATCTGTT
GAGATGATCATGATTTTGTGTTTTAATCTGTTTATGTGGTGTATCACATTTATGACTCGTGTATGT
TAAACCTTCCCTGATCCCTGGTATGAAACCCACTTGATCATGGTGAATATCTTTTGATATGTTGTTG
GATTTCAGTTAGCTAGTATTTTGTAAAGGATTTAGCATCTATGTTCTGTCAGGGAATATGGTCTGATGTT
TCTGGTTATGTCCTTTCTGGTTTTGGTATTAAGTAATGTGACTTCATAGAATGAATTAGGGATGGCT
CTTTCTTCTCTATTTTGTGAATAGTGTCAATAGGATGCTACCAATCTCTCTTTGAATGTCTGGTGA
ATTCCTGCTGTGAATCTGCTGCTGGTCTGGACTTGTCTGTTGGTAATTTTAAATACCATTTCATCTC
ACTGCTTGTATTTGGTCTGTTCCGGGTATCTAATCTTCTTGTATTAAGCTAGGAGGTTTGTATCTTTCC
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TCTTTTGTATTTCTGCAGTGTGATTTGTAATATCTCCCATTTTCATTCTTATTGAGGTTATTTGGATTTT
TCTCTCTTTTGTGGTTAATCTTGCTAATCGTCTATCAGCTTTATTTATCTTTTCAAGGAGCCAGCTT
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GATTTCCATCCGATTTCTTTTTGACCCATGATCATTACAGGAGTAGGTTATTTAATATCCATGCTCTT
CATGGTTTCAAAATGTTCTTTTGGAGTCTATTTCCAGTTTACTCCACTCTGGTCTGACAGAGTGTCTGA
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TGTGAGGTACCATTCATTCATGCTCTTTGTTGACTGTGTACCTTGGTTTTTGTGTTTTAAATTTGCA
TTTTTATTTATAGGTCTCTGTTATGCTTTTAAAGAGGTTCTGTTTTGATGTGTTTCCAGGAATGTTT
CAAGATTTAGGGCTCCTTTTAGCAGTCTTGTAGTGGTGGCTTGGTAGTGGCAAAATCTCTCATCATTG
TTTGTCTGAGAAAGACTGTATCTTTCTTTCATATGTGATGCTTAGTTTCACTGGATACAAAATCTTGGC
TGATAATTTGTTTTGTTGAGGAAGCTAAAGATAGGGCCCCAATCCCTCTAGTTTGTAGGGTTTCTGCTG
AGAGATATATCTGCTGTGTTAATCTGATAGGTTTTCTCTGATAGATTACCTGGTGTCTTTGTCTCAGAGCT
TTAAGATTATTTCTTTGTCTTAACTTTAGATAACCTGATGACAATGCGCTAGGTGATGGTCTTTTGC
AATGAATTTCCAGTTGTTCTTTGTGCTTCTTGTATTTGCATGCTAGGTCTGTAGCAAGGCTGGGGAAG
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TTATTTCTAGGTTTGGTCAATTCACATAATCTCAGACTTCTTGGAGGCTTGTGTAATTTTCTTATTCT
GTTTCTCTTGTCTTTGTTGGATTGGGTTAATTTGAAGACCTTGTCTTTGAACCTGAAATTTCTTCTCT
ACTGTTCATTTCTATTGCTGAGACTTTCCAGAGCATTTTACATTTCTATAAGTGTGTCCAGTGTTCCTG
CAGTTTTGATTGTTTTTTCTTTATGCTATCTATTTCTTGTATTCTCCCTTCGCTTCTTCTATTGTT
TTTTGGATTTCTTGCAGTGGGTTTTGGCTTTCTCTGGTGCCTCTGATTAGCTGAATAACTAGCCTTCTG

FIGURE 1, page 2 of 93

AAC TCT TTT TTT CAGG TAA AT CAGG GATT TCT TCT CAG TTT TAG AT CCA TT GCT GGT GAG CTA GT AT GATT T
TTTT GGG GGT GTT AA AGAG CTT GT TTT GT CAT AT TAT CAG AT TTT GGT TTT TCT GGT TCT TCT CAT TTT GG
GTAG CCT CT CT GT CAG AGG AA GT TCT AT GGC TGA AGG CT GT GT TCT GAT TCT TTT AT CCA CAG AGG GT T
CCCT GT AG TGT AG TACT CT CCCC TTT TCC TAT GG AT GT TGG TCT TCT GAG AG CCA GT AG TGA TA AT GGT T
AT CT CT CT TCC AG GT TAC GCA CT CAG AAG CT TAC CAG GCT GT GAG CTT GT TCG GGT TAT TCG GGT GT TGG CAC
TG AG TTT CT GT GGT GT GAA CT GT CT GT GT CT CT CCG CAT TGG AC ACCT GC ACCT GT TAT GGG GGG AG GT
GT AG AG GGG TGA AAC CG AT CCCC GT TCT TAC GT TTT TGT GGT TTT AAT GCT CT AT TTT TGT GT TGG TGG C
CT TCT GCG GAG GT TGG CCG TTT TGC CAG CAG CAT CAG TAT GGT AG TGT TGG AG GGG CAG TGG CAG TGG C
GGG GT CCT AG CAG TCC CAA GAA TAT AT GCCC TTT GT TCT CAG TACT AGG GAG GT AGG AAG GAC CAT
AG GT TGG GGG CAG GGT TAG GCT GAT CT GAG CT CAG ACC CT CTT TGG AT AG GT TCT TGT GT GGT GT GT
AGG GGT AG GGT AG GT TCCC AG GT CAA T GGA AT TGT GT TAC T AG GAG GAT TAC GGT CCCC TCT GCG GA
GT CAT TCG AG GT TGT CAG GGA GT GGG GAA GGC CAA GTC CAC CAG CTT CAC CAG CT CCG CAG TCT TCG CCA AT C
AA AGGG GT GT CT CAC GCC AAG TGT GT CCCC GT TAA CAA CT TGT AG TCT GT TTT CAG G CAG GGG GT TA AG
AGG GCT TGA AAC TTT GCG CAG TCT GCC CAC CT CCCC AG TGG CAA AAG AAA GGG GT TAT GT TTT TCCC AG
CCT GT GAG GT CT GCA CAG CAG GAT TCG CAC CTT CCCC GT TAT TGG CAG GAG GT TCT TGT ACC GGT TCA
AAT TGT TAA AAC TTT CAG TGG AG ACT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT
CT GAA GT TCT TGT GT GCA GAG CAG GAT TGG CTT TGG GAC CCA GCG AG CT CCCC AG GCT TTT C
AG CT GT TCT TCT TAT CCCC TGT TTT TGT TGT CT AT CTA AAT TGA CT CAG CT CAG ATA AG GT CAG AAT C
TT CT CTT GAA AACT AGA ACT TCA GT TTT CCCC AT AG GAG GT GT GCG TTT CAG GGG CAG GAG AT CT CCCC TTT C
CCA CT TCC GAG TTT GGG GCA CAT AAT TTT GGG GT GT CT CTT GGG TCC AG CAG GAG CAG TCC GGT TCT
TT CAG AG GT CT GT GGG TCT CTT GGG AT TCT GGT TAT TCT TCT GCA GT TGT TCT GAG GT TGA AAT TCA C
AAT GT GAG CTT CT GCA CAG CT GT TCT TGT GCT CCG AG TCG AAG TCC CAT TAG TTT TGT CTT GAG GT CAA AAT TCA C
GGT GAT GAT CT AT GAT CT CTACA GGA TAC AT TTT GCT AGA AAT AT TTT GT TCT CT TGT GCG GGG CCG GT G
GCT CAG CTT GT AAT CCA CAG AT TTT GGG AG GCG GAG CAG GT GAT CAG GAG GT CAG GAG AT CAG AACC
AT CTT GGT TAA CAG GT TGA AAC CCG CT CT ACT TAA AAA AT TAA AAA AT TAG CT GGG CTT GGT TGT GCG G
CG CTT GAT GT CCA GCT CAG GAG GT TGA GAG CAG AAT TGG CTT GAA CCG GAG GGG GGT TGT GCA
GT GAG CCG AG AT CCG CCG CACT GCA CT CAG CTT GCG CAA CAG AG CAG ACT CT GT CT CAAAAA AAAAAA
AAAAA AAAAAA AAAAAA AT TTT GT TCT CCCC TACC TAAA AGG AT ATA AAT TGA AAT CAAAAA ACAA AT G
GAG AG TAA TTT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT TCT
TG CC AGGT GAAT TGA GT GGG AACA T CAG CT CACT GAG CTT GAC CT CTT GGG CT CAA AT GAT CT
CCC ACCT TAG CT TCT GAG TGT GGG ACT CAG ATAC GCA CCA CCA CCA CAG TA AG GT TTA AAT TGT
TTT AAT AG TGA GAA AT TTT CAA AT TTT GCG AG GT GT CT CAG AACT CTT GGG CT CAG CAAT CT GCG C
ACCT CCG CTT CCA AAG TGT GGG AT TAT AGG CAT TGA CCA CT GCA CCG AACT TGG AG GGT AAT TTT
TAA CAA GGC AT CTT TCT CTA AAC AG AG GAC TAA AAG AAT CAG AT TTT CTT CCG CAT GT GACT GT CA
CACA AG CAA AT GACT GT GCT GAT TAGA AAG CTT GT GTAG CT CAG AAT AT CACA TA AT TGA CAG TCT CCG
TT GAG CAA CAT TGA CAG TTT AT GT TCA TTAG TAAA CCA TAG TA AT CT GAA AAT AT TTT AG GT AT AT CTG
CC AT TAT TTT AT GACT AAAAA GAG GAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT
CT GAT TTT TAT
CG CT CT GT CCG CCG AG GT TGA GGT GCA GT TGG CCG GAT CT CCG CT CACT GCA AG CT CCG CT CCG GGT TCA
CG CC AT CT CTT CCG CT CAG CTT CCCC AG TTT CTT TCT TAT CTAG CT AT TTT GAA CT ATAC AT TTT GAT TGT
AT TCC AAAAA AT CAG TACA AAT TAT GAT CA TAAA AT GT CTT AACT TTT TCG AT GAT TGA AAG GT TTT G
TT CAG GT TATAG AT GAT TGA GT CAG TCA CTT GT TTT TGG CAT GGG AG GAG AT TTT CTA AACT TGA CCG
TT ATAG GT GTC ACCT ACCA AT GT TCT CTA AAA AT GT GGC CAG GCA GAG AAT TAT CAG AT GCT GGT GGA
AA CT TTT GGT TCT GGG CTT GAT TCT GCG CTT AACT TGG CTT GAG CTT CAG TTT CTT TCT TACT ACAG CAG
AAAAA TAAT CTT GCT TTT AT CT GT TTT CAT GT GT CTT GAT GATA CAA AAT ATA AT TAT AT GAG ACA
AT TTA AAA AACT TTA AG CAT TTA AG TTT CTT TGT TCT TAT TGG GAG GGG AGG AACT AT CTT TCT TCT TCT
TTTT TCT TTT TCT TCT TCT CTT CTT CTT CTT CTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT
TCT CTT
TT ACT TCT CTT CTT TCT CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT
CCT TTT GAG AT GGA AT TGT CTT GCT GCA CCG GGT GGG AT GCA GT TGT TGT CTT TGT CTT CTT CTT CTT
CT CAC CT CCG AAT TCA AG TGA TCT CTT GCT CAG CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT CTT
ACC AC CCG CAG TAA TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT
TGG AG TGA GT TGT GAT CTT TGG CT CACT GCA ACT CCA CTT CCA GAT TCA AG CAAT TCCC TGC CTT C
AG CTT CTT GAG TGT GGT TCA AG GT TCA AG GT TCA AG CCA CCA CCA CCA CCA CCA CCA CCA CCA CCA CCA
TGG GGT TCCC AT GT TGG CAG GT GT GT TGA ACT CTT GAC CTA AG TCA GT CCA CTT GCT CTT CTT CTT CTT
CC AA AG TACT GGG AT TAC AG GT GT GAG TACC GCA CCG GGT CTT TCT TCT TCT TCT TCT TCT TCT TCT
TCT
AGG GT TTT GAT AG GT GT CTT GCT GT GCT GCA AG TTT CAG GAG CAG TCA GAA AACT CTT TTT TAT C
AA ATA TCC AAC AAG AAT TAT TAT TAT TAT CACT CAG GAG GAA AAG AAG CTA AAG AAG AT CAG GAT T
GC ACA AG CT CT GAAT CCA CAG CAC CCG TGA AAG CCG GGT TCA AAT CTT GGT CTT TCT GAT TCC AAG CT A
TAG CT TAC CT GT GAT TCA TTT CTT GAT TTT GT TAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA
CT TAA GT AAAA TTT CAG GAA TTT TCA GCA AG TTT TAA AT GT TGG TGA GAA AAT TTT CTT GAG GCA A
CT GAT AAT CTA AAG CTT TGT CTT GGT CCA AAT TAT GAT CTT GGT TGT CTT GGT TGT CTT GGT TGT CTT
GT ATAG AG CCA AAG AAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA
AAT TTT GAG CTT TCA CT TAA GAG ATA GAG CT GT GAC CAAT TGT AT TGT GT TTT TGT CATT GCT AT GAA
GGA AT GCT TGG GT TGG TAT TAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA AAAAAA
AG CAG GCG AG CACT TCT TCT TGT TGT TGT TGT TGT TGT TGT TGT TGT TGT TGT TGT TGT TGT TGT TGT
GAG GGG AG CAG GAT GT CAC AT GAG AG GAG CAA GAG TGG GGG AG GAG GT GCG AG GT CTT TTT AAG CA AC
AG CT CTT GCA TGA ACT TAA TAG AG TGA AACT GAAT CATT ACC AT GAG GAG GAC CCA AACT CATT CAT GAG
AG AT CCG CCCC CAT GAC CCA AACT CCCC CAG CCG CCCC CTT CCA CCA CTT GGG GAT GAC AT CTA CA
CAAG AT TTT GAG CCG GCA AAT TTT CCA AACT TTT CCA CCA TTT CTT CTT CTT CTT CTT CTT CTT CTT CTT
GACA AG TTT CACT GAA AT CTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT TTT

4/139

AGTTTCTGGCTTTGGCTAACTCAAACAAAAGGGAATATTTTCAGACTGGTGGCTTGGTAAATCATAGAATG
ACAAACAATTTGGAAGACCAGGTAAATGAACTTGGAGGACATTAAGTGAATTAAGCCAGGCACAGAAAG
ACAAATACGCAAAATCTCACTTATATGTGGAATCTAAAAAGTTGAGCTTATACAAACAGAGAGTAGA
ATGGTGGTCACACAGAGCTGGGGAAGGAGGTGAGGAGATATCGGTCAAAGCATACAAAATTTTCAGTT
AGGCAGGAGGAATAAATTCAGAGATCTATTGTACAACATGGTGACTGTAGTTAATAACATTGTGACTGT
ATTGAATCTCTGAAAGTTGCTAAGAGAGTAGATTTTAAGTGTCTCACTTAAAAAATAAGTATGTGAGA
TAATGCGTATGTTAGTTAGCTCTATTAGCCATTTCAATGTGTATGTAGTCCAAAATCATGTTGTACA
TGATTCATAAATACATTTTTTATTTGTCAATTAAAAATACCTTGAATTTGGGCAACAAAAGCTATCTGCC
CAGGTGGGAACAAATCGCCTCTGAGCATCTTTCCCTTCATTGCATCTCTAATCAAGATAGAAAGTCCCTGG
AGAGAGGGTCTGATTGGACAAGCTTGAGTCCGATCCCTATACTTTGGCTATGAGAGGAATATTCTTGCTG
AAGTCGTCTGTGATAGACCTGTGGATGCATTTGGCTTGGAAATACGAAAGCGCTTGATTTAGAATCCC
CTCAAGTCTGTCTGTTACAGTGGGATAATTTTTATCTCTCTCTCCAGAAGGAATCAAGGGGTGTCA
TAAAGGAGTGTATGCTTAAGCAGAATCTCCCTCCCTCCCAAGAAAGTCTGTTACCATGTATACATTTT
TAAACATTTTATTTTAAAAATAAATTAGACTCACAAGAAGTTACAAAAACAGTACAGAATTGCCATGTAA
CTTTTACCCAGCTCCCCACAATGATACCATCTTATATACTCTAGTACATTATTAATAATATGGACATTGA
CACCGGTAAAAATACTATTAACAGAACACATACTTTATTCTGCTTTTGCTTTTTATTTTATTTTATTTAT
TTATTTATTTTGTGAGACAGAATCTCGCTCTGTCAACCAAGCTGGAGTGCAGTGGTGCATTCACACTCT
ACCTCTGGGTTCAAGCAATCTCTCTATCTCAGCTCCCATGTAGCTGGGATTATAGGTGCCACCCACCA
TGCTTGGCTGATTTCTGTATTTTTAGTAGAGATGGGGTGTCAACATGTTGGCCAGGCTGGTCTCGAACGC
CTGACCTCAAGTGTCTGCCCGCTCTGCCCTCCCAAGTGTAGGATTACAGGTGTGAGACACCACGCCC
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TCTATAACGAGAATCAAGTCATACTGTAATCTCTTTTTGTAACTGACTTTTTCTTTTATCAGTATAT
CAAGATTATTTTCCACATCATTTGACATTTTTCTACAGTGTAAATTAATGGCTACATTGTTTCTATC
CTATGAATATATCAACCTATTTCTTAAAAACCTACTCAGGGATTTAAAAAATAAAACGATGTTTTTA
ATATTATAAGATTCAAGTGTGAGGTATTTCTTATACGTACACATTTCTAAGGTTTGGATTCTTACAAGATG
CTGAAGTGTAGTAACTACTGCTCTCATCTGTACATAGGGAAAAATTTATAGAAGGAAAAACATCAAGAT
TTGGAAAAATCTGTGAGAAATGTTTTGCATTAGTGTGTAGGTGTGTGTGTTGGGGTGGTGGCTGCAGCTT
GGGGCAGAGGCTCAGGTGTGGCTGTGGAGTGTAGATAGAGTTTGGAGTTCCGCTTTTGCCCGCAGG
ACACTTGGTGCCTGCCCCAGAGCTGCAGCCAGAGCCGTTCTCAGAGGTGAAGTCCAGGCAGTGAGG
AGCTGTCTGCCAGTAGGCAGTTGAAGAAAAAATGAGCTAGAGGAAAAAACAACAAAAAATAATCTCC
TTCTAATGTGCCAGGCTGCCGGAGCTGGAATGAAGCACTGACAGGAGTGGGTATTTTATGGTGAAGG
GAATAATCAACTGGTTTTTTTTGGTACCCAGACTTTCCACCTTCACACACACATGAGATGCTTTGAAA
TAAAGATAGTCACTTACTTAGTAAAGTTTGTGACATAAAAAATATGAGAAATACCAAAGAATACAAAA
GGAAACCTTCGTTAATATTATTCAGACTTAAATTTCCAGATTGTATCAACATTAAGGGGGTGTGATGAAA
CATGGGAGAAAGCCAAGGACGTGAGATCGGGCTCAATTTCTGACTTGCTGGGGGAAGGTATCAACACAG
AACTTTTAAAGATTAGAAGGCATTAAAAAGAAATAGAAATCCTGAATCAAAATGAACAGTAAATAAAA
TAGTCCAAAGATGTGTAATATATCACTATCACAATAACTATAAATAGGTTAAATTTGCCAGTTGAAAGA
AAGGAACCTTAAATAGATGATTTTAAAAATTTGGATATATGCTTTTCTAGTGAACATACCTAAAGCATATA
CACAAAACAGAAAAATAAAGATGGAATATCCACAGAGTGACAAAGGAAAGCTGGTGCATTTGTATTA
GTATCAGATAAAGCTCATTATAGATAAAAAACATTATAGTAATAGAGAAAGTCAAGGTTAAAGTTTC
AATTCACCAAGAAATATCCATTCTAAACATGTATACATACCAATTAAGCTGCCTCAAAATATATATGAC
AAAAATTTGGGAACTATAAAGTCAGATATAAGGATTGAAAGAAAGAAATGAACTAATTTTTCAGA
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ATTAAGAAAGATCTAAATAAGTAGAATTACATAATATTCTATGATAGAAAGGCAACATTTTGAAGACGTC
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TCTTTTTTCTCTGAGTATTTTAAAGATTTGAATAAAGTCATATTGCTCTAGGAATATTTTATACTTCTG
CCAGCAGTGTGTTGAGAAATGCTTCTTACATTATCACCACCATAAATGTTTAAACCTGATAGCACAC
AGTTTAAAAAATTTGTAATTTCTCAATTACAGTGACCTTTAAAAATTAATGTTTACTGATCTCTATTATT
TTGTCTTTTGTAAATCTTTTATAGTTTATGTTTACATGTTTCCGTTTTTAAATAGACTTTTAAAGACT
CTTTGTATTAAGAATATTAAGGCTTTGTCCATATAATTAGTATTTTTCAGAATACCCCTTCTAGGTACAG
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AAAAATTACTGACGGTTTTTGAGACGATTTCTGTGCTTTCTTTCAGTCAGCATAATTTTCCGAAAGCAG
AGATGACTCTTCCAGACTGTCTACCAATGCTTGAACAACTGTGTAAGCTTAGTCCAAAAAATAATTTG
ATTAATAGATTTTATTTTGGTAGATTCTAAGGTTCCAAGCAGTCAGAGAAATAATCGCAGAGCCTCAAAT
ATCTCCAAATCTGATACCAATCTTTTGTAGTTGTGAATTATTTCTGTAGTACCAAGAAAGGTAAAGTTT
TTATTTTCTACTCTATTAACCTTTCCCTTGGACAACCTGAATATTAAGATGACTATGTAAGGAGGTTATC
AGACCAAGGCTCAGACATCAGGATAAAGCAGATGCCATAGAAAGAACATTTGTGTCTCAAAAGGTGAT
ACCAAGACAAGGCTGTGGGATATATATGGGCACAAATGGTTGATACCTTCAAAGACTTCATACATGGTGTG
GAGGTTTTTGGAGATTTAATTTATAATGACAATCTTTCCAGTTAGGAGAAATTTTGGACTGTAAAGTTA
GCCAAACAACCTTTTCAATGATAATAAATGCTCTATCTTACACAGGGGAATACAGTTTTTGTGTTTTT
AGTTTTTCTCTGTCTATTCTATAGGGGCATCATATGTCTTTATCATTAATAAATGATTAGTAGAGGCA
GTTGTAGAGAAATTTAATGTGTGGGAATTTAAAGTTTTTAAAAAGATGTAGCAAAATATAGATACATTTAA
GACCACTGCACCAATGAAAAAGGGAATTAATTAACATAGACAACCTTTATGGGTACTAACCATTAATA
TTAAAAATTTAGTCATTTGTAATTAACATTACATTATAATAGTTTTCAATCTATTGTTAAGTTAAATATTT
TGGGTAACAATGTATTTCACAGTTGTTTACACTTTGCATAATTTTCTAAGGAAATGAGTCCCTTAGGG
AGAAAAATGTTCTTAAATTTTATTGTTGGATAATGTTGCTGTACTAACATGGTTTACTGAAGTGGATCTA
CCATGGGTGTTTGGTTTTTGTCTTTACAAATGTATTGGGTGAAATTTTCCATATCACTGGTGAACCTT
TTCATGCTAATTTTCCAGTCCCTTAGTTTAAATATTATGCATTTTTTCTGCAATCTATCTTGAATCTG
AAAAGGCCCCAGAAGGAATTAGCTGAGTGCAGAGTGCAGTGCAGTGCAGTGCAGTGCAGTGCAGTGCAGT

FIGURE 1, page 4 of 93

5/139

GTATCCAGCTTTCAAAAATAGCTTATTGAAATCAAGGTTGAACCATGAAATTTTGGGTTTTTTGGAT
GTAAAAAATGGTTATATATTGGCATTTCATATCATCCAATCTAATATCTTCTCTAGTGAGGTTCTGGC
AAAAAAAAGTATGATGACCAGAGTTGTTCACTCTTTTAAGCTTTATGTTTCAAAATATTTTAAAAATTT
AAAACCATCTAAGTGCATCCCAAAAACATTGGAAAAATTTGTAGGCTAGTTTGTTTAATGATTTTCT
TCTATAGATTTATTTTATGCTATGCCTTACTCTCCAATTAGATTTAGCCATCCAAGAAAGTACCTTG
TACTTCTAAGCGATTCTCCATCACCTGGACGTTAACTGCAGCCACACTGCAGTGTCTTGACTGCAGTA
GGCACTCAGTAAATATTTATGATGGTCTGATTATGGGATGATGAAATATGCTAAAGGTAACCTAAACT
TTTGTCAATAAAACCGAGTTTCAGGTTAGTTTGACCTTTTCCGTATCTCTAAATATTTTCTTTCATGTCA
TTTTTGTGTAATAGCTCACGAAAGTACTTATTGATTCTGAAATCCTTTTCCCTCTGGTATTCTCTGAGCT
ATCTCACTCACACACAGCACACAGTGTCTATTGTTTGTCTGTTTGTAAATCATTCTCATTAAATATTC
CTCATTCAATAAAAATAGTTGATTCCCACTTATGCACAAACTCTATTCTAAAGACTGCTGTTTATTTTA
TGGAGTCAATATCATCATTTTGTTTTCCATTCCACATAATAGTTGGATGCCAATATGAAGTGTATATTTA
TAATAATTAATGTGCTTTTATTTTATTTTATTTTATTTTACTTTAAGTTCTGGGATTAATATGTGCTTT
TAACATTATTGTTTAAAAATAACAGGAGATATCATATCTTAAGCACCTTCTATATTCTGGGCACTGTTCT
AAATGTATCAAAGTATCATCTCATTTAATCCCTCCACACACCTGAGGGAAGAGAGTATTATTCCTTATT
TACAGATAAGGAAGCTGAGGCTTGAAGATTCTATATCTAAGATCACAAAGCTAGTAAAGCAGCCAGT
TTGAGTCTAAATAGCTCAGGTTTAAATCATATTCATGTGGCATAGATGAGCAAGAACAGGTTTTCTGT
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TTTTTGTCTGTTTGTGTTTGTGATGGAGTTTCGATCTTGTGCCCAGGCTGGAGTGCAGTAGTGTGATCT
CGGCTCACCGCAACCTCCGCTCTCTGGGTCAAGTGATTCTCTGCTCAGCCTCCTGAGTAGCTGGGAT
TACAGTCAATGTGCCACCATGCCAGCTAATTTGTATTTTGTAGTAGAGTGGTGTTCACATGTTAGCC
AGGCTGGTGTCAAATCTGACCTCAGGTGATCCGCCACCTCAGCCTCCAGAGTGTGGGATTACAGG
CGTGAGCCACTGTGCCCGCTGTAAAGCAAGTATTGACCATTAGAGGAGATGACTAGTCCCACTGGCA
GGCCTTTCTACTGGGAGTCAGCAAGAGCTCCCACTCTTCTGTTTCCATTGTTCTCTCTGCAAAAGTTC
CATTCATAAAGTGGTTTCCCATTTGATTGTCCAATGATGCAAAATCTCCAGTCTTTTGTAGCACTGAGTTT
CTCATAGCCTTTTACCATTTGAGTTTCTCATGGCTAATGAATGCTAATGAATTTGGCATTCGATTATCTA
TAGGATTCATGAGTCAAGCTCATGAAAGAAGTTCCACTCCCTCACTGTGGGTACCGTCTGGGAATTAG
ACCTTTAATAGGAGTAATTCAGCAGGCAATGTCTCTCTAATAAAGTCTCACTGAGAGCTTCTA
TTCAAAACAACATCTAAGGCTTACAGTGTGACTTTCACTAACTGAAAAAGAATAGAAAATGAATG
TATGTGATGTACACATTCATTCAATGTTTATCCCTAAATTCATAGCAGATTATGACTGATCATTAAAG
CCAAATTAAGGGGGCAAAATGTATAAAACAAGGAACCTTAGGCATAATAGTCTTTAAAGTAAACA
TTACTACTGACAGTTGCTTGTGTGAAAGATATCTTTATTTAATATGGTAAAGAACACAGGAATTGCTA
GCATTACCGTATGTCCATTTTATGTCCACCTTAAATAGATATGTCTGTATAGTCATCAGATTAGCACT
TTAGAAATCAATTAATTTCAAAGAATCAGAATGGACATTCAATACATGTCTTATCTGGCAGGAGAAATG
AACAAATCCTTTCTATAGGAAAATGTAAATTTCTAATAACTCCACAGGATTGTAAGACTTGGGCTGGTA
ACTTCAGTGAATACAGCAGAGTTTGGGCGATGGGAAAAGGTACAGTTGTGTTTCTAACTCTTAACCTTG
TGAGGCAGTGACTTTATTTCTTCTCATGATTTTGCAGTAAGTTCAGTACAGTGTTAGTTTCACTATAG
TTCAGTGGCTAAGCTTTTGAAGGACAGTTCTATGTCTCACTCACTTCTGCCACTTGTAGAAAGTG
ACTCTTGTCAAATATTGGCCCTTTCAAACCTCAGTTTCTTCTATCTGCAAACTTTATTCTAGGGGTTGT
TGTGAGGTTTAAATGAAAAATATGTAAACTCATCAAAATTTTAAAGCACAAATACCAAGTCTCAGCAGA
ACACATACAGTAGGAGTCCAGCCATTAAATTTGAAACAGGCAAGGCAAAATATTTTGTAGAAAGTA
CTTGCAATTTCTAGCTTTTGGCTGAGTGGACAACATTTTGGTGTCTTTTCTTATTGTTATTTTTTAA
AGCATACGTATATGTTATGTAGACTCTTTTGTATGTATATTTAACTCACAATAAATATTTATAAATAGAA
AGAAAGATATCATATATGTGCACATACACTGGTAAGCCCCAATACACTGCCTCATTCTAAATGACTC
TAGCATTGTAGACAGTGCTTTTAAACCTTTTCGCACTCACGAGATACTCTGGGAGCTTTAAATATAT
GCTGATGCTTGGGCTCCACTTCCACATATCTGATTTAATTGATTAGGGGTTCGGCTCAGGCATCAGTAT
TTGTAATAAAGCTTTCCAGCTGATTCTAATGTGAAGTTAAATTTGACGGATACTGATACCGATAAAG
AGTGAGTGCAATAGACACAAAACAAAATAGGAGATGTGTCTCAACAATGGTAAGATTGTTTAAAAATTA
TAGTACAAATTAATAAATAATGTAATGCAATTTTAAAGAAATTTCTTACAATTTTGTATTTGAAAGCAC
CATGTGGATATCATGGGAAAACAGAACTTTGTTGGATTTCTTAAACAAAGATTTTGCAGCTTGGTATC
ATTTCCATTTTGTAGTATTTTGTATCTCAGGAGATGAAAGTGGGAAGTGACAAATGCTTATAAGGCCAT
GCTTTGCACAGGGGTGTCCAGATGAGAGGCAAGTGGAGGGTAAAGTTTAGCCTGCATTCTGTTCCCTAAG
GTACATCTCCTGGTGAAGGGTGGCTTCTAATCAGGGGAAGAAGTCTATGTCTTGTTCCTAATGCACGC
ACAGGTTCCACAAGCCCTCACTTTGTTCTCAAGAGCATAGCATTATTTTGGTGTCTAAGACTGCTGAAT
GTCACAAAATAAATTTTCCAGCACAACAAATATTCAAATAGTTATGTGCACAGCCTGTTTGAACACC
AATAAGTTTGGCTCTGTGGCTGTTTGGGCACTGACATGGTTTGGCTCTGTGTCCCTACCCAAATCTTA
TCTTGAATTGTGATCCCCACATGTCCAGGGAGCGACCTGATGGGAAGTATTGGATCATGGGTGCAGTTT
CTCCCATGCTGTTCTCATGACAGAGTAAAGTTCTCAGGAGAGCTGATGGTTTAAAGTCTTTTGGCAGTT
TCCCTTTCTCTCCCTCTCTCTCTGCTGCTATGTAAGACGTGCTTGTTCCTTTTGGCTTCCGCCATG
ATTGTTTAAAGTTTCTGAGGCCTTCCAGCCATGTGGAATATGAGTCAATTAACCTCTTTTCTTTAT
AAATTACCAAGTCTCAGGCACCTAAACCAATTAGAAGTGTGCCATTGGCACACAGCAGGGTCTGGTGT
CTCCCCACCATCCAGCCACCACTCTGCCAGGTGTGAATGTATTAACATTGCTGGAGTGAGGTGAAAGG
AGGCAGTCTCGCAGAAAGGCGCACTGCGCACTGGGATGGCACAGGAGGGCGCTCGAGAGACTCACCTTAGT
ACTCTATCAACTGGTGAATAATTTAGATATTTTCAATCAATATGCGCTTGTGTATATACAGGGTG
ATTATAAATCTCTTGGCACTTATCACAGAAGTCGAAGTTTCATCATTTCTTTCTCTGTATTGTTTAT
GTGCAACAATATAGGTTTATTTTCCAGTCTGGAATAATCATGGTTAATACTGACTGAGAACTGATCA
TTTCTTCTCTCTTATACCAACCAATGGGGCAGGTACCATTATTAAGGGGGAGGAAATAGAGGTTAA
TAACATGCCCCCAATAGTGTGGGGAATGAAAGAATCAGGATTCAAAGCCAGGTTTGTCTGGGTCTTG
GGACAGCTCAGCGTCTGTGTGTACTGCCCCGAGTCTGCTGCCAATTTCTTCTACCTCATTATCCCT
CAACCTGCAACAGCAATCCACAGGGCGTGAGATGAAGAGAAGAGAGGACCAGGCAGAAAGTGGCA
GCAGCAAGAGAAGATGTACATGAGGAAGTTCTGGGAGGTTCTGCGGCTCTTCTGAGAACAGGGGAGAG
ACAGAGCTGAGTTACAACCTGCACTGCTTTAGCTTCTAGTTTCTCTCAGAAATAGTGGCAAGAAGA

FIGURE 1, page 5 of 93

6/139

GTTCGAAAGTCTTTAGCATGTATTAAACGAAGAATTTGTTTATAAGAAAAAATGTGGATCGTCCCA
TGTTTGTCTCGAAACTCTTCTTAACTTTTGTGCAGCTAGTAAATTAAGTCACTGTTTATTCTGTGTAG
TGGAAGCATGCTTAACTCTAACTCAGGAGACCTGATTCCAGGAATAGTTAAGCCTGAGTTCATTATAA
ACCATTAAAGTTATCTGTGCTATTATCTAGTCTGTTAAATGGAGGGCTTGAGCTGGTTCTTGTAAAGT
GGGATTTGGCTAAGTGCTCTTGGATACAGTTGCTCACCTCTTGGAGCCTCAGCTTTCTTTTGGTGATTA
TTTAATCGCATGTGATAACAAATACAGGGTGTTCGTGTAATGCCTGGAATGGCACTGAGATTGTCTCCA
CTACAGTAAGGAGGTGGTTTGAAGTTAGCTAATTTATTAATTAATGGCCTATAGAGCTTCATGTAGGTT
GGTACTTCAAAGTCCCATTCATATGGATCATGTTTCATATTTATATATTCATCACTTTTATTTCAAATCT
CTTTTCTGCTGAGATCAACTGAGATTTCTAGAAAGCAGTCTTATTGTGAGCACTTTGCCAGTACATTT
AGTAAGAACTTGACTAGCATTGACTCAAACAGTTCTCTTAGAAGGGCTGGCACCTTTTGTTCATATTTT
TTAAACATTAAGTCCCATATAATTAAGCATGAATGCACCTTTCTTGGATATGAACAAATCAATCA
CAGACATGGGAATTAGTGTTCTCTTGTCTTGTTCATATCATGCATTTTTTTGTCTGAGCTTTCCAC
TGTGTCCCGAAGTCTGTGCTTGGTGCTAACAGTGGCCCCACAGAGTACGGCTTTATATTCAGGAGATGA
CAATCTTGTGGAGGAAAAACCTTATACATAGAACAATTAAGGAACAATGCAAGGGAAACACACATTGCA
AGTTTGTATGTACCTATTTTATGGCTATGGTATAAAACAAAGCACCTGTTGTCTGAGAGTGAAGGGA
TAAGACAATAACTACAAAAGGTGAATGAGTTAATTCAAAAGGGAACATTGAGCATGTCATTTCTCTAT
TGAAGTGTCTATTTTGGTATCGGCTTCTTGGTGGTGTGGTTTTGATTCCCTCGCCCGGACTCT
GTTGTTTAAAGATGTTCTTCTATGAGGGATCTTGGATGCATTTTAGCAGTGTTCCTGCTGCTTGT
TTATATTTCTTGTATGCCATCCAGGTACATCACATCTTGTAGATGAGTAAAGGTAAGCATACTTAGAA
GTCAAAAAGAAAAGGCTGAAGTGGTGACTTAGACTTGAGAAATTATAGATTCATGGAGAAAAGTGTGT
TAAATCACAGGACAGGCTGAAAACCTACATTAACCACTGATGGAAGTGAACCTTACTTTTATAGGTTACT
AGGAGAAGGTGAGCTTCTGTAAAGCAGATAAAACAAGGATACCATTAACAGAGTTTCAAGTAATTTAAA
TTAAGAACTGAACATTGATCTGATGATTTCTAGTTTATTATCTGTGACAGAACCAGTAGCTTATTG
AAAACTATCATGGAAGAAATAACTAAGAAATAACATTTAAATATATCAGGATATAATGAGGATGAAG
CTTTAGATAACACAAAAGGCAATTTCTCTTTAGGCTGAAAATACAGACACAGATATATCGACAGAGT
GACCTGCCAGAATCCCTACTTTCCAGCCATCTGATAAAGGTCAACGATTGAACACCCAAACACGTTGAT
ACACACAGCACCTGCTGATGAAAACCGTTAACAGTGTTCCTCAGCCCAGAGTGCACCTGTTTCTTAA
AGTTTGAAGAACAGTAATCTAAATTTCCCTATTCCATGAGTAAAGTTCTACTTTTTCTTTTTCACACTA
AACAGCATTCGATGTTTGTAGCTGAAAGTCAATTAAGAAAAATGATTGTGTCTGTGTTTTCTGCTTTC
TTTTAAGCACCTCTAAAGAAGTGTCTTCTTCTTCTGAAATTGAGAACGAGGTAGGAATGAAAGACTGAAA
CGGTAACCTCTCATATAATTTTATTATTATGACAAGTTGGGTTTATGAAGTATTTTCCAATTACTGCCT
CCAATTGTTAAATAGGTAGATAACATGCCAGCTTTAACTGCCAAAAGCTTGTAGTCTTAAATATTTTT
GTAGTATTACTATTAGTATCATGAACAGAAATAGCAGTGATAAAAAATCAAATCAAGTTTTGTGAACACC
AAAATTCATTTGCTGCTGTGTGAGGGTGGTTTAGGATTGGTAGAATTAATATTCTTTGCAAACGGCTG
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GCAGTCCGCAGATTTTTAAGTGGTTGTTTTTTAGAAAGTGTGTCACGACCTCTAAATCATTGTAAAT
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AGCCGCAGATTTTGACCACGTGTGCACAGCCTCCCATCTGGGCAAGCCCTTTCTCTCCACCCTCCACT
CCACAGCTTCTGTTTCTTTCTTTCTTTTTTTTCTGCTGAATTCATCATCCCTCCCTTTCCCATGCCGA
GACTTAAAGGTTTCAAATACTTCAAATACTCAATGATTCTAAATCACCTCAGATGACTTACATACAATG
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AGGAATATAGAGACATTATCTCAAATATTACCTCGAAGAGACAGAGACAAGAATTTGCAACATTCTAG
TTCTCAAATCATTTTAGGTATTTTATTTCATTTTGCTTAAATCTCTTAGACGGTTATTTCTCTCGATACAC
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GCCAGAGGAGTGCAGACACTGACCTCTTTTTCAGCTATTAGAGGTGAGGAAAAAAGTTGTGTGGTTG
GTGTGGAGAGAGAGAGACACGCACTTCTTTTAGCCATCATCTACTAACACCTTCACAGTACATTTTCT
TGCTAATAATCCCAACCATTTTACAGGGAAGGTGCATGTTCTGTTCTCTGGTGAAGGGCCACCCA
AGGAATTGAGGTTCTGGTGAGTAAGAAATGACAGAAGTACCCACAGCTCCTGGGCCATTGGTCTCTCTTA
TCCAGCCTCCACTGACCTTGTGGGCTCCACTGCAGTTTTCTTCTTGAATTAATCTATGAGCTCTCTGTT
CCTTCAAAGTACTGAGCTTCTGGCCTTAGCACATCTGTTTCTGAGCCAGAGCACCTTCACTGAGAAGC
AGACCTCTACTTGGCTGGGTTCTTACTCACCTTATTGGTGCCTCTTCCCATCCCCCTCTCTCTCTCT
CCT
GAATGAAGGCATGCATGAATGCACATGTTGGAGGACGAAGGTTCTGTTTTTACTCTCAGTGCACCAAAAC
CCAGCAGAGTTAAATAGTGGAAAGGTTCTTAAGTGTCAAGTGAAGTATGAGTGGAGGTCATAAGGCAAGCAGA
GTGGGAAGGGCTAGAAGGAGAAGAAAGGAGAAGGGAAGGCAGGAGAGGAGAGAGGTGGGGAAGTGGAA
GGGTAGTTGAATGTATAGCAATTAGAGTTAGAAGAGGAGAATTAGTAGAAAACAGAGCTAGAGTCAAA
AACAGAGTGAGACAGACAGAAATTCATAGATTTGCTGTCTGGCCAGATCTCATTTGGATAACTAGAGCCT
CCCTTCTCTCTTGGGTTGAATGGTCTTTACTCATTTTATGTAGACCATCTTACTTCCACATGGAG
TTTGTATGTTCCCATAGACACCAATACTTTACATATCAGAACCTTGTCAATTTTATAAAATTTGTTTTT
TATTAGTTTCTTTCCACTAGACAGTCAATGTCATGGATGCAGGACTATAGGGTCTTATCTTTTTCATC
ACAGTAGCCCTCGAACCTAGCACAGTGAAGTTGCCATAATACATTACTAAATATTTGTTGAAAGCCTA
AAGCACTGGGCAAAATCATTTTGAATTTCCAGACTTCAGGATCCCCATTTGTGAGGGAGCTGGTCTATTTG
ATACCTAAGACTCCCCCTCCAGCACAGGTCTTCTATAATTTTGTATCTACATGGCTTCTGCTGTATGCA
GGAACCTAAGATTTAACTCAAGAAGACAGGGATGTTGCTTGCAAGACCCTGAAGATCTTGTCTATCCAAA
CTGTGACTGCTGAGACTGTTTATACAGGATCTTGAAGTGGCTAGGAGAGTGAATGGATGGTAGTCC
CAGTCTTGTGTCAGGGAGAGGAAGACAGCAAGCAAGTTCATTACAAAGGATTTTCAAGTGAAGC
TCTACTATGGACATCAAAATATGCTGATGAGCCACAGCAAGTTCATTACAAAGGATTTTCAAGTGAAGC

FIGURE 1, page 6 of 93

TCCTCCTTTCAGAGTGAAGGAGGAAGAATCATCCAGGAAAGAGAGAAATTATGTGTATTTCATATATTGCT
GTATGTACATATTAAGTACGCCAGCAAAATATTAAGTGCATTCATGGGCAGCAAAATGCCAAAGAGATGAAGAGA
AAAAACAGACTCCAAGGATCATATAATCTGATTGTGGGAAGAAAGGCATATTCATCATGAAAATGTAGCAA
AGATGTTAAGTGAGTGTCTTAGTCTATTCTGTGCTGCTATAAAACATACCTGAGACTGGGTAAATTTACAA
AACAATTTATTTCTCGTGGTTCTGGTGACTAGGAAGTCCAAGATCAAGGCACACAGAGATTTGGTTGTGCG
ATGAAAGTTTCAGTTTCTGCTTCATGCATGGTGCCTCCAGAGGACAGGAACACTGTGTCTCATATGGCAG
AAGGCTGGAAGGGCAAAAGAGGAAAAACCCCTTTTTTTTCTTTTTTTTGGATAGAGTCTCGCTCTGTCA
CCGAGGTGGAGTGCAGTGGCTGCATCTTGCTGACTGCAAGCTCCGCTCCTCGGTTTCATGCCATTTCTC
CTGCCCTCAGCCTCTCTGAGTACGTGGGACTACAGTGCCTCCGCGCCGACCATGCCTGGCTAAATTTTTGTA
TTTTTTAGTAGAGACGGGGTTTACCCTGTGTAGCCAGGATGGTCTTGATCTCCTGACCTCGTGATCTGCC
TGCCTTGGCCTCCCTAAAGTGTGGGATTTACAGGCGTGAGCCACTGCACCCGGCCAGAAAACCTCTATCAG
TTCCCTTTATAAGGCACTTAATTTTATTTCATGAGGGAAGGGCCCTCATGCCCTAATCAACCTTTTAAAGC
CTGCCCTGTTAATACTATCGCATGGCACTCCTGAGTTTGGAGGGTGCACATTTCAACCTATAGAAGTGG
GATAAGCCAGACACTTGGGTTTCTATGGGTCTCTCCATTTGGTTTCTGTTAAAGATTTAAAAGAGC
AGAAACACTACTTTATTAGAGAAAGGGCAATTTGAACCTGGCCTTTGAACATGGCAGGATTTGGCCACTTA
GAGATTTGGGGTGGCATTCTCCAGGTAGAGAGAGAGCAAGGACATGGAGAGCACTTGGCACTTTATGAGAA
TAGTGAGGGTTTCATGTCAAGTTACATGAAGCTGACTCATGACAATAATTTGAAAGGCGAGTTTGTGAC
CAGGCTAAAGGCATCTGGACTTTGCTCTAGAGGAAATGTGAAACCATTGCGAGATTTCTGAGCAAGCTGTT
GGCCAGAGCCTGCTCTCGGGGCGACTCAACAAGTGGTAGGAAGCTCTTTGGGAGCTGGGAGAGAGAGAG
AGAGAGAGAGAGAGAGAGAGAGAGAGAGATGGGAATCCAGGGGAGACAGACAAGTGAGAAAGCAGC
TGCATTTGCGGCGCAGGCTGGGGTTGCTGGTTTCTGAAAGGGGTAGTGTGGGGAGTGGGGAGAGGGG
TTAAATGTGAGCTTCTGAGGAAGTACAGGAGGGGTGAATTCACCATGGAGAAAGTATTCATAACCAAGC
CTACAGAGAAGTTGAGGAAGGTGGAGGAGTAAAGGACAAATGATGTCTTCGAGAAACCTGCTCATGAAACC
TGCTCAAGTAAACCTGAGGAGGCAAAAGCCTGATTTCTAAAGTGTGAGAGAGCAACAGCAACCTGGGGA
GGTGGGTTCAGTCCGAACCAAGGTTGAAGGCGAGGACTCAGGTGCTGGAGTGTTCATGTGGATCT
TTGGGGTTGGCACTTGCTGTGAGTTACCTTGGGCAAGTTACTATGTGCTCTAGTTTCTGTAAATGG
AGATCATGATGTAACCACTTGGTAGGGCTGTTGGAAGGATGGAAGGAGTTCAGAAACAGAAAGCTCCCAG
CACAGAACCTGGCCGTAAATAACAGTCTATGTGTTTGCATACAGAGGAGTACTTTAAAGAAATTTAGT
CGAGATGAGTATAAATGAGACCTGGAGTGAGTACAGAAATCAACACAGGTTTCTCTATAATGGATGAG
AGATTGTAAAACACATTTGCAATTTGGGAGAGAGACACATGGGAGAGGGAAGAAATGGAAGACACGGAAGA
TTTGTGGAGGCAAAATTTAGATCCACGACAAAAGTACGGGAGTAAAGTGCATGGGGAAAACCTAGTATTGG
AGGGAGGAAAAATGGCCTCATTGTCATCTCGAATAACATCTACTTTCTTACCTGGTCTCTCAAAGGCC
ACCAAGGGCCAGCCTCTGGCCTGTTTCTTTAGCCGTAACTCTCCATTTCTCCCGCTGCCATTTGCACAT
CTTGCAATTTCTCAGAGCTGCCAAGATGGTCTGTGCGCGGCCCTTCTCTAGCTAGCCTATCTCTCTCGAG
AGCCCTTCCCTCAGCTTCTTACTTGGCTGAATCTGTTGTCTTACCCAGCTCTCACTTTAAATTCGGAAGT
CCTTCCCTGACCGCTCAGGTCCAAAGTAGCCATTAACATTCCTTACATTAACCGTTTTTCCATCTTTACA
TGGCATTTGATCTTCACTTGGTGAATCTCTTGTATTTATTTATTTGGTGACTGCTGCTCTCTCTTCAACA
ACGTAATAAGCTTCATTACAGCAGAGACCTCTTGCTGTGCATACAGTATCCTTGGCTCCTGGCCATGG
TAGGAGCCAGTTAAACGTTTGTGAATAAATAAATGAATACATCCTTCTGTAATATGTGAGAAAGTGG
GAGGCAAGTCTAGGTGAAGAAGGCACTTAAAAAAAATTTTTTTTTTGGAGACAGTCTTGCTCTGTACCCA
GACTGGAGTGCAGTGCACGATCTTGCTCACTGCAAGCTCCACCTCCGGAATCAAGTGATTTCTCATGG
CTCATCTCTCTGAGTAACTGGATTACAGGCTTGCAGGTTACACCCAGCTAATTTTGTGTTTTTCTGTTTT
TTTTTTTTTTTTTTTTTGGAGCGGAGTTTCACTCTTGTGCGCCAGGCTGGAGTGCAGTGGCGCAATCTC
GGCTCACTCCAATATCGCCTCCCGGTTCAAGCAATCTCCTGCCCTCAGCTTCCCGAGTAGCTGGGATT
ACAGGCTCTGCAACACCATACCTGGATAATTTGTATTCTTAGTAGAGATGGGGTTTCCACCGTGTGACCA
GGCTGTGCTGAACTCTGGCCCAAGTGATCTGCCTGCCCTGCCCTCCAAAGTGCTGTGATTATAGGC
ATGAGCCACTGCACTTGGCCGGAAGACAGATTTTGAAGTGGAGGAGTAGAGGAAATAGTACATACT
TAATTTTATCTGAAATCATGAAGTAAATAATACATAGAAAGTGAAGGGGTGAACCTCTGGGTGTATAT
ATTCATGGAAATAAATACAGTGTCAAGGTTTCTCTGCACCCCATGTTCACTGTAGATATTGCACAA
TAGTCAAGATATGGAATCGACCTGAGTGCATCAACAGATGAATGGATAAGCAAAATGTGGTATGTATA
CACTGTGGAATACTATTACGCTTAAACAAGAGAAATTTCTATCACTGTGACACAGTATGACCACTG
GAGGACATCTGTCTAAGTGAAGGAGCCAGGCACAGAAAGACAAATTTGTCATGATCTCACTTACATGTG
GACATCCAAAAAGTTGAACCTGTAGACACAGAGAGGAGAATGTGGGTTGCTGGGGAGGAAATGGAATGC
GCAATGAAGGGAGATATTTGTTCAAGGGCCACAAAGTTTATTTAGATAGGAGGAGTAGTTCTGGAGAGC
CTATTGTGCGAGCATGTGTGACTGTAGTTAATAATGATGCACTGTATACCTAAAAATTTGCTGAGCAGTAG
AACTTAAAGTTCTTTTTTAAATTTTTTATTTTAGGCCAGGTGTGGTGGCTTATGCCTGTAATCCAGCAC
TTTTGGGAGGCCGAGATGGGCAGATCACTGAGGTGAGGATTAAGATCAGCTTGGCCAAACATAGTGAAA
CCTCGTCTCTACTAAAAATACAAAATTTGGCCAGGCATGGTGGTGGCTGTAATCCCGACTACATGG
GAGGCTGAGACAGGGGAATTCCTCGAACCAGGAGATGGAGTTGCACTGAGGCTAGATATGACACTGG
ACTCCAGCCTGGGTGACAGAGTGAGACTCTCAAAAAATATTTATTTTAAATTTTATAAATAAAGACAGGTT
CTCCCTATGTTGCCAGGCTGGTCTCAGACTCCTGGGCTCAAGCGTCTCCACCTCGGCCTCCCAAG
CGCTGGGATTTGACCGCGTGACCACTGCACCTGGACAATCTCGAAGTTCCTACCCAAAAAATGATAAG
TATGTGAGGTGGTAGATATGTTAATTAGTGTATTTACATTTACATTTGATGTGTATGTAATGCAATGC
CACATTTGATCCCAAAAAATATATGCGGTTTTTATTTGTCAATTAAGAAAAAGAGAGGGGACATAGGCACA
CACCACCATGCCAGGCTAATTTTTTTGTATTTGTATTTTTTTTTTTTTTGGAGCGGAGTCTTGCTCTGTTG
CCCAGGCTGGAGTGCAGTGGCACCACTTTGGCTCACGTAGACCTCTGCTTCCAGGTTCCAGGTTCCAGCTCTC
TGCTCTCAGCTCTCAGGTAGTGGATACAGGCATGACCCCTGCCAGCTAATTTTGTATTGTT
AGCAGAGTCTGGGGTTTGGCCATGTTGGCCAGGCTGGTCTCAAACCTTGACCTCAGGTGATCCACCTGCC
TCGGCCTCCCAAAGTGTGGGATAACAGGCGTGAGCCACTGCGCCAGGTCATTTTTTTGTATTTTTAATA
GAGACAGAGGTTTCAACATGTTGGCCATCCTGGTCTTGAACCTCTGACCTCAGGTGATTTCAACCCACCTCGG
CCTCCAGAGGTGCTGGGATACAGCGGTGAGCCACCTCCCGCCCTTAAACCTTTTTTAAAAATATGTTT
TAACATTTCTTGTGCTCAAAATTCATGATCAATTTTTTTTTTTTTTTTTTTTGGATGAGGTGCTCACTCTG

8/139

TCACCCAGGCTGGAGTCCAGTAGCAGATCTCGGCTCACTGCAAGCTCTGCCTCCCGGGTTCACGCCATT
CTCCTGCCTCAGCCTCCCGAGTAGCTGGGACTACAGGCCCCGCCACCAGCCAGCTATTTTTTTTTTGT
ATTTTTAGTACAGAGTTTCACCGTATTAGCCAGAATGGTCTCAATCTTCTGACCTCGTGATCCGCCCGCC
TCAGCCTCCAAAAGTGCTGGGATTACAGGCATGAGCCAGCGCGCCGGCTTCATGATCAAATTTGTAAA
TGGTTGATGGATAGATGAAAAAATCTCTAATTGAAAGACATAAGGATCACTGTATGATCAGCAAATGT
AGATAAATGAATATAATATTGATTCACTTCTAAAAGAAATATATTGATGTCTCCCACTATAAATAATTT
TAATCAAGTTCTTGGACTTCTAAATAGTTTTTGCCTTATATATTTGGCTGTTTTACGTTTGGACGCTTC
ACTTTATTAATTATGTATCTCCTTTGTAAGAGTGATACCATTCAATTACATAATCTCTATCTTGT
GGTCAGGTTTTCCACAATAATCAAATGCCTTGGTATTAACTGACTCTTTTCAAAGTAGCGTGGACA
ATTTTGCTGTCATCATGTAGTCTTGGGCTTTTGGGTTTTATCTTTCTAAGACTGTAGATCTCAATCTTGA
GTTTATCAATATAATCTATAAAAAATTCAAATTAAGCCAGGCATGGTGGCTCATGCTGTAATCCCAGC
ACTTTGGGAGGCGAGGTGGGAGAATCACTTAAGGCCAGAAATTTGAGATCAGCTTGGGCAACATAGTGA
GACCTATCTCAACAACAATTAATAAATCTGGATGTGGTAGCGTCAAATGTATTGCCAGCTACTCA
GGAGGATGAGGTGGGAGGATCACTTGAGCCAGGAAATGAGGTTGCAGTGAGCCATGATTATGGCATTG
TACTCCAGGTTGGAGTACAACTTTCAGCTTGTCACTGAAAAAAGGACACTCCATATCACTTTTTGCCA
TTTTGTGTGTGTTTACACATCTATCTATCCACATTTGTGCTTAATTTGGACTTTACAACCAAGTGATTTT
CTCCATTATAAAGAAATTTGCATCATTTTCTTTTTTTTAAATTTTACTTTAAGTTCTGGGATACATGTG
GGGAATGTGCAGGTTTGTACATAGGTATACATGTGCCATGGTTGTTTGGCGACCCCAACAACCTGTCT
CTAGGTTTTAAGCCTTGCATGCATTAGGTATTTGTCTAATGCTCTCCCTCCCTTGTCCCCACCACCC
AACAGGCCCTGGTGTGGGATGTTCCCTCCCTGTGTCCATGTGTTCTCATTTGTTCACTCCCATTTATGA
GTGAGAACATGCAGTGTTGGTTTTCTGTTCCCTGTGTAGTTTGGTGAGAAATGACGGTTCCAGCTTCAT
TCATGTCCCTGCAAGGACAGGAATCATTTCTTTTTATGGTTGCATAGTATTCATGGTGTATATGTGC
CACATTTCTTTATCCAGTCTATCATTTGAGGCAATTTGGGTTGGTTCCAAGTCTTTGCTGTGTAAATA
GTGCTGCAATAAATGCCTGTGTGCATGTATCTTTATAGAATAATTTATAATCCTTTTAGTATATACCAG
TAATGGGATTTGCTGGGTCAAATGGTGTCTTCTGAGTCTTGAAGTGTGAGGAAATGCCACAGAGTCTCCAC
AATGGTTGAATAATTTCACTCCCAACAGTATAAAGTGTTCCTATTTCTCCATATCATCTCCAGC
ATCTGTTGTTCTGACTTTTTAATGATGCCATTTCACTGGCGTGAGACGGTATTTCAATGTGTTTTT
GATTTGCAAGGAAATTCATCATTTTCCACTGAACCTAAGTTGCAGTTCCATTCTGCCTAAGACCACCAA
ACTCACCTGCCCACTTTATACCTTCTGGATGTCAAGTGAAGTTTCAAGGTTGAGCAAGAGAATTTGTAAA
CTGCATTGGATTCTGTTGAGAAATGCTATGTTTTCAAAGGTTGAAAAATGTAGACATGTATTTTCAGA
CCTTTTTATTTTCAATCATAGCAGTGAATTCCTTGATGGTTTTATGAAAAAATGTTTTTCTCACTCCT
AGGCCATTTAAAAATATATAATATGGAGTTGAAGTTATTAATAGAAATAACTAAGGTTGAGAGAGATGG
CACTTGTACTATTGAGTACAATATTAGAAGCAAGTGCTGTTATATTGCCAGACTATATAAAAAAACAAGT
GTTTCTAGTGCACTGAGTGAATGTATGGTTTAGAAAACATTACTAATTACGTGCGTATTTCAATGATTAT
TCACTAAGTACTCACTGAGGGTCTACTGTGTACCTGAGTCTAGCCAGAGGCTTGTGGTGGAGAGCTGAGC
AGGTGAGGTCCAACTTATGTTCTTGCTATTTCTTTGGGTGTGGGTGGTTGGATGGTTAGCTCAGTGGTC
TCGGATGCTGGAATTTGTTCTAATAAGTTTCTGAGCTGCTTCATAAACCAAGAGGGTTAGGGGAATATA
GCTGAGTCTGCTCCTTTCTCCTCCTTCTCCTCCTCCTCCTCCTCCTCCTCCTCCTCCTCCTCCTCCTCCT
AGGAAATTTGAAGTGAATGAAAAAATCAGTGTTACAAAAATGGTCACATTTTGGAAATAACTCTACA
CTTACATAGTGTTCTAGTGATTAGAAAACAAAAAGCCATCATTTTAGGCTAGATTTTTCAGAATGATC
ACAATGCTACCACTGTTTTGCACTTACCTTAAAAAATAAGTGCTTCCCTAAGTTTGATCATTTGCTTG
TTAGCATAAATTTGGCCATTAAACATTAGCAATTTGAGACCCGTAAGTCAAGCCAGGCTATGGTGAAA
CAAAATTAGCAAAATTCGAATTGATGCCGGAATGTTGAGCCGCCATAGATTAAAGGCAATTTGCC
AGGTTACCGTCTGCAGGTTCTGCTATGGACAGGTGGGGGCAGCAGAGAGCTGGCTGTGGTCTCCAGAAG
GGAAGGCCAGCACCTGCCTGCAGATTCCAAGGCACAGGTGGAGGTGGTAATGAGTTACGAGGTAGAGTCA
AGGTTTGGACTGCATCTGAGAAGGGAGGAAAGCAAGAGAGTTAGAAACACCATAAAGATGAGACTGCAGA
GCAAGCCAGAATGGAAGTAGGACAAAGAACTGGTGTAAGTCAAAGAGCAAAAGGTGCAGGGGTACAGGGA
GGAGAGGTTGGGTGGGAGACAGGAGGTGCCGAAGGAGGCCAGCTGCTTCACTAGTGCCCTTCCAGT
ACCTTCCCAACTCGGTGAGCCAGGTCCATACTTGGTTCTGTTTGGTCTTCCAAGGGCTATGAAGGGACAG
GGATGTGAGAGACACCAAGCCATCTCTCTCCTGAGCTATTAATAATGAAAGTTCTGTTTTATGAACAA
ATACTGAAATGAATGGAGAACACTCAACAATTTGGTAGCAATCAGGGTGTGGTAGTGAAGCATTTGCCGG
GCTTTTCTCTGTTTCTGCTGCAAGGACTAAGTCTCTCAGCAGCTCTGTCCATCTTTTCCGAGATTTTT
CACAATCACCAGGAATATAGTTCACTGCTCTGTTTACTTAATGGTGGCTACGCTTGAAATATCATG
CTCTCCTGTGTGGTCTTGTCTAATTTTCAAATGGTGCTAATTAGCAGACCCCAACACATGGGCAGC
CTTCTTCCCCAGACTTGGCACCCCTCACTCGCTGCATTTAGCACCCCTCGTGGGAAGGCATCCTGGAGAT
CCCTTATCTGCACCCTGTCTCCATCTACCCCTTCCCACTCGCGGAAGCTGCCTCACCAGAGAACTGCTA
TCTGATAAAGAACATCAACAAGTCTAGCAGATGGCTGCTTATCTCAAGACACATATATCACCAAAATC
CTAGCAGAAGAAAAGCTGTGTTGGATGGTCCCTGAGAGCTAACTATAACATGTTCAAACCTGTGTAACG
CAGTTTGGAGATGGAGACAGATGAGGAAAGAAAGACAAAGGAGAGAATACCCAAAAGAGGTTTTGGAA
AAGAAGAAAAATTTGTTCTTTATACATATATATCCATAAAGATGAGGGTCTCACTCTGTCTATCCAGGCTG
ATCTCAAACCTCCTGAAGTGAAGGGATCCTCCTGCCTCAGCCTCTCCAGTAGCTGCAACTACAGGTACCAA
GCTGAGCAAGAAGAAAAATTTGAGTTAGGCTTTAGAACATCAAACTAAGACTCTGATTTTCTTGAGAAAG
TGGATGAATAATTTGCTGTTAGAGATGACACAGTAACGATAGGTTTCTACTCTTAGCTATGCTGGGGC
AGCTTGACCGCCACTTTGTTGATCACATTAATTTACCTCTTCTGCTTTTATTTCCCTTCTGTAAAATG
GGAATTAATGTGCTTATGACAAATATCTCAAATGATTTTTAAGGCAAGAAGAGAGAATGTTACTGACAG
GCCATGGTTCTCTGGGTGAGAGGGTCACTGTGAATGAATGTACACACAGAGCCTTTTATAGTGAGGCT
TAGGGTGTCCCGTTTTCTTTGGCGGAGTAACATCCACCAGTAGTATTCAGTCTAGTTGCATTGTTCTG
TCGCTATTGTTTGAATCTTTTGAAGTATTACGACAGATTTGTTCCCTATTGTTTCAATAACTCTTTAA
AAGCTGACTATAGGACTCCAGTCCCACTGGTTGTTCTTTGCCACTTGGCAAGGTTGATTGATTTTAT
TTTTCTTTGGCCTGTGCTTCTTAGTGGCTTGAAATGAACACGGCTTTTTTCTGTTTACCCCTTTGCC
CACATTGCTCAATAATAGAGTCGCCCTGGGAAGCAGAGTTTGGCAAGGAGAGGTTTGGTATAAATTTG
GAAGATTGATTGTTTTCAGATTATTTTCTCAAATGCTGAACTGCTTCTCAGGGGTTATACCTCTTTAC

FIGURE 1, page 8 of 93

9/139

TCATGAAAACTCACACATTCTCTTAGGTGGTACTGTTAAACATGTTACATCTGTAAAAAATTAATAAAA
CGTAATGAAAGAAGCAGGAAGCAAGTGTATACACATGGTGGCCTGAGCAATTGGCTGTCATGTTTGGTT
TGATTATAGGTGTGTGAGGCACATGTATGGTGTGCGTGGAAACAGATGGATAGAAGTGGTAAAAAAGATG
AATCCAACCTAGTGTCTTTCAATTTCTCCTTGACATGAGAATCACCTGGAGAATAAAAAATACATTG
ATGCCGACTGGGCACAGTGGCTCATGCCATATAATCCCAGCACTTTGGGAAGCTGAGGCAGGTGGATCACT
TGAGGTGAGGAGTACGAGACCAGCCGGGCCAACATGGTGAAACCTGTCTCTACTAAAAATACAAAAAT
AGCCAGGTGTGGTGTACACGCTATAATCCCAGCTACTTTGGGAGGCTGAGGCAGGCAATCTCTTGAAC
CCGGGAGGCAGAGTTGCACTCAACCGAGATTGTGCCACTGCCTCCAGCCTGGGCAACAAAGCGAGACT
CCATATTAATAAAAAAAAAAATTTGATGCTGAGTCTCTCCCAAAATCGGAACATCTGTGGGTGTG
GGTTCGGCATGATATTTGTAAGTCTCCGTAGCTGCAAAGCCAAGTTGGGAACCACTGATAACCAACAG
AAAAATGCTTCTGGAAGTGTTCGGGGGAAGGAGTCTAGCTAGGATCAGACACCTGTCTGGGCTCAAT
ACAAACCACTGGTTTTTTTTTTTTTTCTGAGATGGAGTCTTACTCCGTTGCCTGGGCTGGAGTACAGT
GGCGCAATCTCAGTCACTGCAACCTCCACCTCCTGGGTTCAAGCGATTCCCTGCCTCAGCCTCCAGAG
CAGCTGGGACCACAGGTGCATGCCACCCTCCTGGCTAATTTTGCATTTTGTAGTACAGACAGGGTTTCA
CACTGTTGGCCAGGATGGTCTTGATCTCCTGACCTTGTGATCCACCCGCTCGGCCTCCCAAGTGTCTGG
AATTACAGGCATGAGCCACCACACCCAGCCACCCTGGGTTTTATAAACTCTCAGTAGGCCTCCTCTCTCT
GGCCTGGTCCCATCTGACCTTCTTGACATTCAAAAAAGTATTTTCTTTAGTTGAACTCCAGG
AACATGAAGTGGCATTAAACAGAAGTATGAATTGCCCTTTATTAATTTGCAGTGGTCTTTTCTTACCAA
AGTCTCCTGACCCAGTTGTGAAAAAATTTCTTGAATGTGGGTGACACATCTGTTTCATATCTCCAAGG
CAATGCCCTCAGAGCCAACCTCCTCCCCGTGTGACTCAAGGATGCCAGTGTCCACATGTGGCCTGTTTT
CTTCTCTTAACATGGCCTAAAAGGCCCTTATTGAACCTCCGTTAGCTTTATTTATTTTGTAGATGA
ATTCTTGCTCCGTACCCAGGCTGGTGTGTGGTGGCGCAATCTCGGCTCACCGCAACCTCCGTCTCCAG
GTTTCGAGCAATCTCCTGCCTCAGCCTCCCAAGTAGCTGGGACTACAGGCGCCTTCCACCACACCCAGCT
AATTTTTGTATTTTGTAGAGACAGGGTTTACCATGTGCGCCAGGCCAGGCTACTCTCAATTTCCCGA
CCTCAGGCGATCTGCTGCCTCAGCCTCCCAAGAGCTCTCCTTAGCTTTGAAAGTAAAAGCCAACCCCTT
TTGGCTGGCCCATGAGGCCCCACACCTTAGCATTTCTGTTACCTCTACCACTCCTCTCTCAACTCTG
CCCTTTGCTGGTGCCAATTTGACTGCACCTAGTGTCTTTTGTGACTGCAGCTGTGCCTGGGACACTCCG
GTCTTTGCTCTTGTACTGTTCTGAGCTGTTATGTCCAGAATGCTCTTCCAGCAGTTAGCTACTTGT
CCTCTGAGTCTTCAGTAGCTGCTCAATATCAGCTTCTCAGTCACCCTGTCTGATCACCTGGCTTATAAG
TCCAGTCCCTACCTTTGACTCCCATCTCTAATCCCTGCTTAATCATCGCCTTAGCACTGTCAACCTCT
GACTTTCTTTCTATATATATTTTATTTATTTGGTTAGCTCGGCTGCTTCAATAGATACCATAAACTGGGTG
GCTTAAATCAGACATTTATTTCCACAGTTCTGGAGGGTGGAAATCTGAGATCAGGGTGCAGCATGGT
CTGGTTCTGGTGAGGGCTCTTCCAGGTGCAGACAGCCACCTTGCTTTTTTCTTTCTCTTTTTTTTTT
TTTTTTTTTGTAGTTGGAGTCTCGCTCTGTGACCCAGGCTGGAATGCAGTGGTGCCATCTCGACTATTGCA
ATCTCCACCTTCCAGGTTCAAGTGAGTCTCCTGCCTCAGCCTCCCGAGTAGCTGGGACTACAGGTGCACA
CCACCACGCCCAGCTAATTTTTATATTTTGTAGTAGAGACGGGGTTTTGCCATGTTGGCCAGGCTGGTCTT
GAACCTCTGACCTCAAGTGATCCACCTACCTCGACCTCCCAAAATGCTGGGGGGTCTGAGCCACCACGC
CCGGCCAGATGCCCCACCTTCTCCTGTGCTCATGTAGCAGAAAGAGATCAAAAGAGCTCTTTGTTTCT
TTTATGAGAGCACTAATCCCATCACAAGGCCCTGACCTCACAACCTAATCACCTTCCAAAGGCCCACTT
CCTGTGCCCATCATATTTGGGGGTTTGGATTTTCCAGCATATGGATTTTGGGGGACACAAATCTTTCAGTCC
GTAATAGTTGGCCTCCTCCCTTGTCCACTAGAATATAAGCTTCCAGGAGTCCAGGATCTTTGTCTCTTT
TGTTTACAGCTATGTTTCTTAACACCTACAAATGCTGGCAGATGTTAGGTGCTCAGGAGATAATTATT
GGATGAAAAAATGAACCGGTCTCCTCTTAAACCCCTGAAATCCTGTTTCGAGTCTGCTGGGTTTGGCTTG
CTCCACTGGGATGAAGTCTGGCTTGGTGTCTTGTCTCCAGGGGTAGACGCCCCGTCTCTGGGAGGAC
TTGAGGCTCTCCTGGCCTGCTGCTTGGCCTCCTTACCTGTTCTGCCACTCAGAGCCCTGCCAGCTGCCT
GGGATGGCTGCCGGGACGCTCCTTGTCTGCTCAGTCAACAGTGGGGCCTTGGTTTGGACCTTCACT
TATTCTTCTGTGAACCTACCTCTCTGGTCCCGAGCTCGTCTTCTGAAATTTTGTGTTGGTCAAGCCC
AGTCTTGTGTTGCACATCCCTGTGAATGATTCTTAATTATATTTCTGGCTGGCTCTGTGCAGTAGACCATA
GAAATAACGATTGTTTCTGGGGTTCGCTGGAGTGTGAACAGGTGGGGGAAATGCCTCAGGACGATTGGA
CCGAGGAGACTCTGAGATGACTGATGAAGCGACAGCAAGAGCTTCCACGCTCCTGATGGCAGGAGGGG
ACGGCGGTGCTGAGGGGTGGGGGAGGCTCAGGGGGAGCTGTTGAGGGTCCCGTCTCGTCAATTTCTAG
CTTCTCAGGCGCCTTGATCTTGTCTATTAGAAGCCTCTGGAAGCACAGGAGTGTGGAACCTGGAAGCTG
TTCTTGGACTATTTTCGCAACACTTTTCTCCAGGAAAAAGAAAAATAAAAAAGCCTCATTCTCTCGT
CCCCAATGTTACATAATCGAACATTTCCCGTCTGGTTGAAATGAATATCCTCTTGGCTGAATAAATAA
TGCACAGATTCTTCCGGGACAGGCTGCTTCCCTCAGGCGCCGCTTCCAGGGATCCGGTCTGCTTTGTGGG
TTTAGTGGTGGCCACAGCTGGACGCGGGGTCCAGCTTGGGGTGGGGGAGGCGGTGCTTCTGCCAAAT
GTCTTTTAAACGTCTCAACAAGTAGCAACAAGGCCCCACCTGCGACAGTTGTAGTGATTCCGGAAGACC
TGCTCACCACGAGGTGCTGGGGTGCCTTGAGCTGGCAGTCTCCGGTGGCTGCAGTTTAAATAAATCTCC
TAAGTGCAGATCACCACACAGGGCGCGGAGAACTGAAAGTTAAACATCTGGAGTTACAAACACTCA
CAGGCTATCAGCTGTCTGAGTCCCGTAGGAAAACGTTTTATCGGATGCTTTAGTATCAACCTTTTAT
TTCTAGCACAGGTTTTTGTATTTTACATGGAGTGTGATTATTTTCCATGCCAAGTCACTGTTTT
CATAGCCTGTTGTTAATCTGTGTGCACCTTTGTTTTCACTCTATTTCTTTGCTTCTATATGAGAAA
AATAAATGGCACCATTGAATTGCACGGTAGAGGCTGATGCTATTCCAGGTGCTCAGGTTGGCTTTCCCAT
CTTTCGTTTCTCTGTAGGAAGTTTTTTTTTGGTATAAAGGGAAGGACAGAATTGGATCTCCCTGGAGGG
AGTTTCATGTGTTTCTTATTCTGAGCTGCCGGAGCTGGTTCACAGCACAACCTTGATAATTGCTGAGTAG
ACCTAAAGTTTTGAAATCAAGATCTCTTTGGAGTTTTACAAGTAAATTTCAAAATGAGAAATGACTA
TCCCAATTTATTTTGAAGAAAGGTGCAGCTTGTAACTTTTCAATGAATTTGGTAAAAGGGGGCTAATTTG
AAAAGGAAACTAATAGGCAATATTTACAAATTTGTGAAAAATATCAGAATAGTATACGTGGAAGAGTTAT
TAGACATTCCATTTGAGTGTAAACCCATTCCTTTGATTCTGAATCTGTTTAGGTTTCTTAAAGATT
TGATGAAGTTTTCAGACTCTCCTTCAGAAAAATGCACATATCTTATGTACCTAAATGTTTGGATATGA
TTTCAGGGGATCCAAATCCCTGGGAGCCCCCATGTGGATGTTTGTGATGCAGAAATGGGGTAAGAAAA
CCAGGAGAGCTACAAAAATTTATGAAATAGAAATATGAACATACAGTACTGAGCCAAAATTTAGTTGT

FIGURE 1, page 9 of 93

10/139

GAGGAAAATGATGTTAAATGCATTTCATTTTCTAAATGATGACAGAAAATTAGACTCATATTACTATCCGG
GTGAAGCATATTTTGTACTTATGGTGACCTAGTGATCCAAATGCCTGCTCTTTGGTCTTATCCTCTTATC
TTCCTTATGTCAATACTGGGCTGCTTAAATATGTACTGTCTCCGATGTCATTAATCTAGTTTTTGTCTTTTG
TTTTCTATGTTTTTACTTTTCTTGTTCCTATTTCAAATACTTTGACGGTATTGGGACTTGGGGACA
TGTCTTTCCAGTACAGATTTTGGTATTGTAGAGGGAGGTTTACAAGCCAGGTGGGTGACTTGGGGAC
TGAGGCTGCTCAGTAGCCCTGTAATGGTCAGAGTCTGCTGTTTCTGTTGCTTGGAGAGCAAGGTGAATG
CAGGTCTCTTTGGATATTGGGGATGATAGAGGGATGTGGATTGGAGAGGAACAGGACTTCCTGCCCTC
AATTTAAATGGAGATTTCATTTGATCAAAAAAAAAAAAAAGCACATATATTCACCAGGCCCTGTGTGAA
CTACCACCTTGGATGTAGGTGGAGTAAGCCATATTTCCAGGTAGCCTGCAATCAACTGCAATCCATTGGT
GGTAGGAGGCATGGGAGATACAGAAGTAACCTCAGGACTAGATTGAATTGGCCACTTATCTAAGAGTGTTA
TCAAGTGTCTGTAAATGTGTGAATCTGTATTAGTTATCAGGTTGTATACATTTTTTTTTTCTTTTTTTT
TTTGAGATAGAGTCTCACTCTGTCGCCAGGCTAGAGTGCAGAGGTGCTATCTCAGGTCACTGAAACCTC
CACCTCCCAGGTTTCAAGCAATTCTCTCACCTCAGCCTCACTAGTGGGATTACAAGCATGTGCCACC
ACGCTCTGGCTATTTTTTTTTTTTTTTTTTTTTTGTAGTTTGTAGAGATGGGATTACCATGTGCCCAGG
CTGGTTTCAAGCTCCTGAGCTCAACTCATCAGCCACCCCTGCCTCAAAAAGTGTGGGATTACAGGCGT
GAGCCACCACACCTGGCTACGTGTATACAAATTCATTTGTCTCCCTTCCTAGACACAGCTCCTCAGGAT
CATATGTGTCTTTCTTGTGTCAGAGAGAGATGCTTCAGTAGTGCTTGTGTCTAGAGGAGAAGGGTAC
AAGTGGCATGTGGAGAGATTACAGAGAAGGGTAGAATAGGATGATGTTGGGCCATCAGGAAGGTCTCCATG
GAGAAGGTGTGCTTTGAGATGAACACTGAGGAAGTGGTGGGATCACACCTGACCTAGATAGAGAAGGGGC
TGAAATCCAAGCATAGGATGGTGGGAGCAGGGAAAGAGAGGTTGACTGAAGTTGAAGGCTGGAGAGGTTG
GCTGGAGAGCGGTGATCAGGATATGGTAAGTGGTTGTGCTTAATTTAATCTTGCAGTAACACGGTGAG
GATGATTAATCGGGAACATAATCTGTTGAAGGTATGTTGGACGGATTCGAATGGTAGAGGCTGTCCGCA
ACCAGACCAATTAGGACACCATTTGCAAAAGTCCAGCTGAGAGCTGAAGAGGATCTGACTTGTGACAGGGA
GTAGGACAAACAAGGGATGGAGGCTGGAGGTATTTTGGAGATACAGCCTGCAGTTCTTATAATCCAACT
TCCCAGCAATATCTCAGCCAGGAATAAAATAGGATGAAACAACAATAACACAATAATATTTTATCTC
TGCTTTCTATCACTGTTTTCGCAACCTGCAATTTCTTCTGGTTCTTCTTCTTCTGCGGGCCAGGTGAACAG
GCAGGTGCTGAATATCACTGCTGGGCTCACAGAAGCCCCAGTGTGGGGGGCCAAGGCTGCGGCTGCTG
GTGCCAATCAAAGGCACCCATAGGCAGGACCCCTCTCCACTAGGTTTCATTGCAAAACGGGAAGCCTCAAG
GCAGGCGCTTTCCACTGCTAATCGGTACCTGGTACAGGAATTAAGGCTTCACTTTGTTTGTCTGAGGGG
TTTACAGAGATTTTTTCTTCTGTAAGCCACTGCTCCTTTCTACTAAATTCGGAGTTGTGCAAGCTGGG
AAGTTAACTTAGCAACAGAGTCTCTGCTGTATTTAAATATCATTTTTGTCTGACACTGGCCTCCTTTTTT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGGAGACGGAGTCTCGCTCTGTGCGCCAGGCCGGACTGCGGA
CTGCACTGGCGCAATCTCGGCTCACTGCAAGCTCCGCTTCCCGGGTTACGCCATTTCTCTGCTCAGCC
TCCCGAGTAGCTGGGACTACAGGCGCCCGCCGCGCCGGCTAATTTTTTGTATTTTAGTAGAGACG
GGGTTTACCTTGTAGCCAGGATGGTCTCGATCTCCTGACCTCATGATCCACCCGCCCTCGCCTCCCAA
AGTGCTGGGATTACAGGCGTGAGCCACCGCGCCGCGCCACTGGCCTCTTGTCTTAGAGGAAATATGTGA
ATTTCTCCTTTCTGCTCAGAAGTACACCTTAGTAGTTGACAAACGTAAACTACCCGAAGGGCCAGCCTTC
TCTGGATCCTACTTGAGACTTGCTTCTGCTGAGAAGTGTGTGCTTTGTGTATCTGGTGATCGAGATG
TCTGGAAGAGTGGGGAGAGACTGAGGGGCAGATGGGGAGTAAGAGGGTCAAGAAAGCTATTTTGGTTCA
GCAGTATCAATAATGTTTTTGTCTTAAATCATTGCTTCTTCAATGTTGCTTCTTGTCTACTCCTGTAA
ATATGATAGCCCATTTATCTTCTAATAGAAAATTTTTCATAATTTATTTCTCACATAAGATGTTTATGG
CTTTATATATATGTGTGTATATAAAGAGGAGGCACATAATTTATGAAAGCAGATTTTAAAGCCTTTCTA
CAGATGAAATGTAAAGTTCAATTGCATTTTTTCTTTTGGAGATGGGTCTTACTCTGTCACTCAGGCCAAA
GTGCAGCGGCACGAACGTGGCTCACTGCAACCTCAAACAGTTCTCCACCACAGCCTCCAGGTAGCTGGG
ACCACAGACATATGCCATCACATCCAGCTAATTAACAATTTTTTTTTTTTTTTTTTTTTTTTATTAG
AGACGGGCTTCTTCTACATTGCTCAGGCTAGTCTTGAACCTTAGGCTCAAATTTCTTGATTTCTTCCAA
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TTTATCCCTATAAGCTTGAACCTAGGGCTTTCATACTGAGTAAAGACAGTATACAGTGTCTATTGAGGATG
GGTCATATTATGGCTCCGTTGTGCAACACTCTAGATCTGGACACTGAAAAGTGGACTACTGATGGATTTT
ATGCCCTGTCTATAAAACCAGCACCTGGGGCTGGAGCGAGTGGCTCACGCCTGTAATCCAGCATTTTGG
GAGGGCCGAGGCGCGGATCACAGGTCAGAGCTCAGACCATCCCGGCTAACATGGTGAAACCCCGT
CTCTACTAAAAATACAAAAAGAAATTAGCCGGCGGTGGCGGGCGGCACCTGTAGTCCAGCTACTCAGAA
GGCTGAGGCAGGAGAATGGCGTGAACCCGAGAGCGGAGCTTGCACTGAGCCGAGATGGCGCCACTGCAC
TCCAGCCTGGGTGACAGAGCAAGACTCCATCTCAAACCAACCAACCAACCAACCAACCAACCAACCAAC
CAACCAACCAACCACTAGGCCCTGGATGCGTGTAAAGGTAGCTAAACACTCTTAGGTTACATATTCTG
ATGGGAAAGACCACAGAGGTGCCCTGGATACCTGGTAATAAGGGCTATAGAAGAAATATGGAAATTC
TACAACCTGTGAGTACTATAGCCAACCATGCGGCTATAGCCAGACCTGCAATGTGCTCATGGGTCCA
GAGCCCCCTATGTGTTATCTCAGCTCATGGGCTTCTCTGTTCTGCTAATCTCACTTGTCTAGGAGGCT
TTCCTTACTTTTGGCCTCCATGCCACCTGAGACATGCGCTTGTCTTTGCGGCTCATGACCTCAGTGCAG
GTTTCCAAATTCATACCTCAGAGCTTGAATGATTGGTCCAGTTCATCTTTTTCATTTGGTCACTGCTC
TAGGTCACTGGCCAGTCTATAGTTTGGCTGATCTTTGGTTGGGTGTCTCACCATGGTCCAGTTAGCTGTG
ATCTGAAGTGGGCGTAGGGTGGGGAGGTTGTATGAACCTGAGTTGGTTGTTCAAGTAACAGGAGCTGAGA
GCATGGCAATTTTCTTAGAAGCATAGTGAAGTGGTCAAGTACTGATTGATATCTCCAGGTAAGCAG
AGTTTCAATTTTGGTTGCTCTTACAGAGGAAAGCCAGAGCCAGAGCTGTTTTGCTAGAGTGATAGAAC
TGAGATAGTGTGTTGAGCAGTGGCCAGTGGGAACATCTTTGCTGAGAAGAACGAATAAAGAATTTTGGCA
ATTAACATATGTAAGTCCAGACTCTGCTATCATCTGGGGTGGCAGATAAAAAACACACAGTCCAAAT
AAAAAACCTGATTTTTTATTTAGCCTGAATCACCAGATCACAGCAGGATTTTGTCTGAACAACCCAGA
CAGATTGCATTCATTTTCTGCTTACTGTGCTTGTGGAAGCCAGGCTGTAGTGGTTTCTTCTGGAATGG
GAGAATGTATCAAAAAAGGTTGAACCTGAAAAATTTCTAGAATTTTCTGTTCTGTGCTTCTTAATAA
ACAATGTGACACTATCAGGAATGTGTGTGACCCCTCTTTTTTAAAAAATAAAGATGTAGTGGATAGC
ACAATTTGATGAAATGTGAGGCTTATTTTTTCAATTTGAAAAATGTGTGTGAGGGAATCAGGTGTAATGG
CATGATACATCTCTTAAATTATACCTTACGAGATTAATTTGTCTGTGTTTCAATTACACTGTATTATA

FIGURE 1, page 10 of 93

[illegible]

12/139

CACTCTCTAGCTGTGCAATTTAGAGGCAGATTATTTAACCTCATGCCTTGAATTTCTCATCTGCAAAGTG
GGAGTACTAACAGTAGCTACCAGATATATTATATGGAATAAATGACATTAAGCCACTCATTAACTCCTT
GCAGTTTCCAAGCATTAGAACTCAGTATGAGGAAGTTATTTCTATTCTAAGCCTAGCACAGTGCCTGGT
ACTCAATACATGTTGGTTGAATCAGTGAAATAATTCAAGGTCAGCACCAAGCTGCTAGGAATTTATGAA
CATCTGATCATAACTGGAACTTGATCTAAAAAGCAAAGGCGAGTCAATCCAATCAACTGAGCGTACCAT
CTGTTGAAATGCTGCTGCTTCTGTAATGAGTATAAAGTGTGGAAGAGAAAGTCCAGGAACCTCCATCAT
TCTTCTTCCATCATTCCTCTCCTTTGTGACTATCTTTGTGATGAGAAGGGTAACAAAAAATCTTGCTG
AGATGAGCGTGTCAAAAACGTGTTACAAATGCTTCACATTCCTTTTACATCAACAGAAGCATGTTGCTT
CATGTTGGGCAATGCTTCTAGTCCATACACATAGAGCTCTATGCTGATTTTTTTTTGAGATGGAGTCT
CGCTCTTTACCAGGCTGGACTGCACTGGTGTCTTCTCAGCTCACTGCAACCTCCGCTCCAGGTTCA
AGCAATTCCTGCTCAGCTCCAGAGTAGCTGGGATTACAGGCATGTGCCACCATGGCCAGCTAATTT
TCATATTTTAGTAGAGACGGGGTTTACCATGTTGGCCAGGCTGGTCTCAAACCTCTGACCTTAAGTGA
TCCATCGCTTGGCTTGGCTCCCAAACTGCTGGGATTACAGACGTCAGCCAGCATACCGGTTGTATGCTGAT
GTTCTAATTCATGTGATACCAAAGACCTGAGATAGTCTCTCCACTCTGGCCCCATAACATATGTCAC
GAGGTGGTAATAATAACAATATAGTAGCACCTAAGGTTGGGGCAGCTCTTACTTTGTGCGATGCTTTTT
ATAGTGTATTACGTGTGATTCTCACAGCAACCCAGGTTGGTGAACAACGTTATGATTCCTGTTGTACAA
ATGAGGAACTAAGCTTCTTGAAGCTAGGTAACATGCCAATATTACACAGCTTCAAAGTGACAGCCC
TAGGACTTGAAGATAAACTCATCTAATTCCAAAGCTCATGCTTTTAGCCATTACTTGAGACAGTATTAA
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TAACATTACACCTCTCTTAGCCTCAGCACTTCATCTGTAAAATGGGAATAATTACATCCGAGTACAG
AAGTTTTGTGGCTTCTCATGAGGATTAATAAGTAATGCATGTAAAGAGTTTTGTACAAAGTTCACCT
TTATAAAATGCAAGTTGTGGCCGGGATTGGTGGTTCACGCTATAATCCAGCACTTGGGGGGCTGAGG
TGGGTGGATCACCTGAGGTCAAGAGTTTCGTGACCAGCTGGCCAAACAGGTTGAACCCGCTCTCCACTAAA
AATACAAAAATTAGCCAGGAGTGGTGGCATGGGCTGTATCTCAGCTACTTGGGAGGCTGAGACTGGAG
AATCGCTTGAACCCGCAAGTGGAGTTGAGTGGCCGAGATTGTGCCATTGAACCTCCACCTGGGCAA
CAGAGTGAACCTGCATCTAAAAAAGACAAAAAAGTAAGTTGTTATATGCAATGCATAAATT
ATTACTTAGTTCATGTAAATCTTCCACTAAGTGAATGAGGGTTCACCTGGCTGTAGTGTATGAGAT
AGATATGAGGGGAGAGTTGGTTTTATGCTTCTCAAAACAGAAAGTGTGCCAGGTTGAAGTGTGGGTGGG
GAGTCTCCGCTCCAGCCATGTGGCAAGCTGGAATGTGAGTACAGCAGCAGTATGGATGCGGTTTTGA
GGGATGGTGGTATCTTCTTGGCGGCCACCCCTCCAGTATTGTGGGATGCTCTCTGATTTCTTTTGA
AAGACAAGTAGCTAGGAGCTTCCCTAGCCTTTCTGTTGTAAAACCATCAAGATCCCTGTTGAATGCATA
CCTGGAGCTTGGTTTTCCCTAAGCAGAGCTTTAATAACTTCATTTGGTTTTAGTCTCCTATTTAAAGCTG
CCACCCACTCTCAATTTTTTGGGTTTTCTACTAAGAAATGGATATAACATGGGCAGTCTTCCAGTTCTCC
TTTTCTGCTGCTTGAAGACAACACAGGCCAATCACAAAGGAGCAGAGACAGGCCCAACAAGTTGAC
AATCCTAGAGAGCTTAGTGTGAGTAGACTTGCTGAGGTTCTGACTTTTGCTGGAATAGGAGAGTGCCAC
TGGCTTTTTGACATTTCTTTTCCAATGTTTCTTGTCAAATGACCAGCAGCTCAGCTCCCTTAAACA
TACCTCCTCCCTAGATTGGTTCAGAGGAAGCCATCAAGGTCCTTTTGCAACCGGATGATCTGCATTTTT
GAGATCCTTCTTCTCTGCTGTTCATGAATGGTCTCATTGGAATAATTCCTTTTGGAAATGTTACTAA
GGACACCAAGAAATCAACAAGAAATTTGAGTGTATCTGACAGAGAAATTTGGCTTTTGTACTCTAATA
ATTATTTATTAGAGCAATAACTGGTCAGAAATTTATTTGCTTAAACCATGTAAAGAAAGGTGCTTAATA
AAGATAATTGCATCATAATAGTAATCCGTTTTAGTATCTTTCACCTTAAACTATGTGACAAATAAAGA
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ATTTACAAAATTTAAAAATTTTGGAAATCGTACCTGCATCAAGTTTCTGAAAGAAATTTAAGGATTAAG
GTACTTAGAATCCAATATATGCATAGTTAATTTAACTCATATTGTTAAATTCCTTTTCTAATTTTATT
TAAGAAATGAGTAATATTGACAAGGGCCTTGCTGTGGTTTATTATGGCTGTCTAGAGTCTCTATTCCC
AGCTAGATTAAAAGTGCTCAGGGCTGGGCTGGTGGCTCATGTCTGTAATCCCAATATTTTGGGAGGCT
GAGGCCAGTGAATCAGTTGAGGCCAGGAGTTTGAAGACCAGCTGGCCAAACATAGTGAATGCTATCTCTA
CTAAAAATACAAAAAATTAGCCGGACATGGTGGTGCATGCCTGTAATACCAGCTACTTGGGAGGCTGAGG
CAGGAGATTGCTTGAACCTGGGAGGCGGAGGTTGCAGTGAGCTGAGATAACACCACTGCATCCAGCCT
GGGAGACATAGAGAGACTCCATCTCAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATA
AATAAGTAGTGCTCGGCTCGGCTGATAGATGGGTTGTTACAGTTTCTACCTGTGCTTGGGAAGTGCTGG
TACACACTGGTGTGTCACATAAATTGTAGAGTGAATGAGGCTGGCATGTTCTTGTATCCCTAGACAA
TCTCTATCAGGTGTGATCAGTAAGGCACATAATATGATATGTGACTATTACAGAGTAGCACACTACAATA
TGTGCCATAAGCCATAACATCACTAATAAATTCAGCAGAGTAGAATGTGAAGAGTGTGTCAGAGTGC
TGAGCACCCGCTGAGGAAGTGTAAAGAGAAAGGATTTCTGGGTTGGTGCAGGATGGTTAGGATAG
CTTTGGGTAGGAAGCGACTCTTGACCATGACCTTAAAGGACAGGTAATGTTTACATGGGAAAATACAAGG
AAAAGGAGGTGCATAATGAAAGCATGGGGAGGTGGTTTTGGGAAACCATCAGTCTGACAGAAACATAG
TTAAGAAAAGTGCAAGGTGGTGGTAGGAGGTAATTTAGAAGTGAGAGTCAGATGTCTATTAAAGAGCT
TGAACCTTATCTGTAGGCATTAAAGATGTTGGTGTAGGATTGGAATGAAATAAAGACTTAACCTTAGAA
AAATACTGTGTGGATTGAAGTTTTAGATGAAGAGTGGGTACATCAATTCCGAGGTGAGGGAATAGTTT
AAGGGAGGTGTACACCATTAATAAATCTTTTAGGACTTGTTTTTGCAATCATGATTGTTTATGGTT
GTAAAGATTTGTTTCAGAAATGATTGGTGGAGAAAGAGTGTATTGAGAATCAAAAGATGGGACTGTGC
CACTGATGTGCGCAGTGAGAAGCTGAAGCTTGGTGGCCCATCTTCTAACTGTAAATGGGCATAACAA
CTACCAGACAGCCGCTCAAAACATTATAGTATACATGAAGACTAAGTGATATAATTTTGAAGGCA
GTATGCCCTATATGTGTAATGCTGTTTACTTGAATATTTTATAGTAAATATTTTCTTTGGACAA
GATATAGATGCAGAGAAAATGATCATATTTCTGTGAGATTAGGATTGAGACCATTTGAATTTTTATAT
TTATTAATAGGTACTTTATGTTGGGTACTGAATAAGTCTTTTATTTTAAACCTCATTTCCCTCACAA
AATGGATGGCATCTTTGGACTAGGGGAAATGTGTGGTCCCTGCAGCTGTAGTATTTTATGATTCTATAGC
TTTTGCTTTTAGCAAATCTCTTAGAATAGTGATTTAAGGGCTGGGTGGTGGCTTACACCTGTAATC
CCAGCACTTTGGGAGGCTGAGGCAGGCAGATCACCTGAGGTCAGGCATTCGAGACCAGCTGGCCAAAT
GGTGAACCCCTTCTTTACTAAAAATAAAAAATAGCCCCGTGGGAGCATGCGCCTGTAGTCCAGCT
ACTAGGAGGCTGAGGCAAGAGAACTGCTTGAACCGGAGGTGGAGGTTGCAGTGAGCCAATATTGTACC

FIGURE 1, page 12 of 93

13/139

ACTGCACTCCAGCCTGGGCGACAGAACATTTAATGCTGGTGGCTCACACCTGTAATCCTAGCACTTTGGG
AGGCCGAGGTGGGTGAATTGCTTTTCTCAGGAGTTTGAGAGCAGTCTGGGCAACATGGCGAAACCCCAT
CTCTATAAAAAACAAAAATTAGCCAGGTTGGTGGTGCACGCCTGTAGTCCAGGCTACTTGAGAGGCT
GAGGTGAGGAGTACTTAAGCCAGGAGATCTCAGGCTGCAGTGCAGTGCATAGCCGCACTGCACATCTG
CATTCCAGCCTGGGCAACAGAGCAAGATCTTGCTCTTAAAAAAGAAAAAGTGCATTTAAGATATGCACAG
TATAAACACAAACCAACCATGGGCATCTGTGCTGGGAATAAAGACAGACATGTTTTTCATTGCACTGAT
TTAGGATTTCTGCTTGGAAAGGAAATCTGATCTCTCTCGCATGCTGCCTAAATGCTTTTACAGTTATGGG
AATGAAAAGGCTAAATCTGTGATTTGTGGTAGAGGAGGAGGAGGAGTGCCTTTTCTGATTTCTCTCT
TTTTCTTTCTCTTCCAGGGGAAATTAAGAGCTAGACCAACAAATTTAAAGAAAGAAAGCAAGGAGCTACT
GGGGGTAGACTCGGGAGGGGAAAAAGGCCAAACCCACTAAATAATTTCACTTCAGTTACAGTAAATCTCAA
ATGATGATGCTACATCTCTGAGAAATGTTCCATGGTGGAAATGCCTGGGCTTTGAATTTTGAGCAGCGAAG
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CCTCCGGTFACTCAATCTTCAAAATCAAGCATATAGCTCCTTACATGTCATTGTGTAGAGGAAAGA
TCTTAGGAAATGTTTTCTAGGAAAGGGAAAAAGCAGAAAGCAAAGGTCTCTGCTTACTACAGCAATTC
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GGGCTCTGCAGGGTCTTTTCTTCACTTTCTTCTGCAGATTTGGATTTCTGTCCATTTTACTCTCTCTCTG
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TTCTTAGAATCTACTATTACTGGGTATATCAGACAAGTTTGTAGATTTACAAAAGTGTGGATAACATGGG
TTGCACTTGATTTCTTATCCAGCTCTTTGGGTTCTAAATTTATTGGCAATTTTATTATCAAACTATTC
TCGACGGGATAGTATTTTCTGTGGACACAAGGAAACATCTGTGAGCTTAAACCTTAGAGCGAGATAGCCA
GTTAGAACATTTGGCATATGAAGCTTAGATAGCAAGAGAAAAATTAACCAAGCAACCTCAAAAATA
TTGAGAAGCAACTAAGAAAAATTTCTTATCACTGACAGACTGCAGTATTGAGTTCGTGTTAATGAAGAA
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GACTGCCAGGATTTATGGTAGATTATATAAATGGAATCCTGAGTCTGAGAGATCAAAAGGAAATGCTGGC
TCTTTCTTCATCCTATCTCTTAGGTCAAGCTATGCAGCAAGCAAGCCAGTTGAGATTTAGCAATATTC
TGAAGTGGGCAGTGGAGACGGCCAAACAGATAATATATAACCAGAAAGTCACCGTGGAGGGAAAAATGTG
GACTGAAAATAGATAAGGGGTGGAGGTAGAATTGCAAGCCATTGCTGAGTGTCCACAGTCCAATTTA
CTGAATAACAGCCAATCTTCTACTTGTGGTTATTATTAGAGCGAGCTAGAGGCAAGTGAAAAAAA
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ACATGCTAATTTCTGAGTACTTCCAGAGATTGCATTTTCACTTATGATTTAGTGGGTTGAAGTGGTGA
GGAAGCCCATATATCTGACTTACATGGGAGAAACAAGCTTTTTTTTATAGTTTAGTTAGTGTATATATT
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GTGGTATTTTTTCTTCTATTTGATATGAAACCATAACTACTTACTTTGAGCAGATGTTTCCAGCTCC
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GGGATATCTTAAAGACCCCAAGGGAGTCTATTGAAATAACTTAAAGTAAAAATTCAGAAGAAATTTTAC
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AACCCATCTCTACTAAAAAGATAAAAAATTAGCTGGCGGGCGTGGTGGTGTGCGCCTGTAGTCCAGCTA
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GTTGCATCCAATCTGGGTGGCAAGAGCGACATCACTCAAAAAAAGAAAAAGAAAGAAAGAA
TGGAAAGTCATCCGTGGGCTGAGTTGGTGTAGTGGAATTATGGCTGTGCGTGAATGAAGAAATCTTGC
CAATGGCATCAGTGGTAACATAGCTTAAGCCCTACTCAGCTTTGTAATAAATGTAATCAAGGAATTTGAT
CTGAACAGGTAGGCAACATGATTTCTCAGTGCCATTTGTAAGTGAGACTACTTTTCTTTTTTAACAG
CCTTATTTCACTTAAGTGGGAGTCAAACTAGCTTTAATTAAGGAAATCTGTAGAAATCAACCCATCTC
CTTTCTCTCTCTGTTAAAAAACAAGGAAGAAAGAACTAGGAAGGAGTAGAACACAAGATGCTCTCTC
ACATTTCCGGGACTGCGGTACCAAAATATCAGCACAGCACTTCTGAAAAAGGATGTAGATTTTAACTCG
AATTTGAACCATCACTGAGGTATGTGTGAACATACTAGTTTCTCTTCTCTCTCCTGACTTTGTCGGT
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AATTAAGGATACAATCTGTGCACTACCACCATTTAAAAAATCCCAAGTCTACTGTGTGGGTGAGGTTT
CTTGTGATAGTATCAGAGAGGTTAACCAATTTATTACATCTCAATAGTCCACTCTAAGTAGGGAAAAAT
CCAAGCTTTTTTTTTCTTAAGAAAGAGCTTTTCACTTTTTTTTCCCTCAGAGCTTTACCATAGTTTCCAG
CAAGTGAACAATTTCTTGAATTTGAATTTTCAACACCTCTCTCTTGGCAGTTGTATGTTGCTAATA
GGAAGCAAAATGTGAGTGTGCTTTAATTTAACCTAAAAATAGGGAATATCTTCAGATTTAGACTTTTA
CATATTCAGTGACCTACCTAAAAATAGAGACATAGTTCTAACCTTCTCAATCATTAAGAAACATTTCTAT
TGAATTTAATTTTCAAAACAACAGGTAGCAGTTTCAAGAGGAAAGACAGCCATGCCATTTGATTTT
TGGGTCAAGGAGTAATACATATTTTTTATTTAAATTAAGATAAAAAAATCTACTGACTGTCAAGTCC
ATTTCTCATTTCCTCCATAGAACATTTTTTAAACTAGTTTCAACAACCTCTTGAAGAGTCAATGCTCTAGAA
AGTGCAAAATTTGACCATTGCCTAGAAAGCCAACTTGAGAGGCTGTGTATCTATGCAGCATTTTGCAAAATC
GAGTACAGGCGATGTGATATAAAGATTAATGCAACCCCTGATTTGTGAATAGTATCTAGCCCTTCAAAA
TGTTCAAAAGACAGGAAGTCTGCACTTTTAAAAATATAACCTGCCAACTTCAAGGAGGGGTGGGT
TAGGACCTAGGTCGTCTGCCAATCAGTTCAGATGCCAGTGGAGCAAACTGCATCTCACTAAAAA

14/139

GACTGGCAAATATTACTCAGCGTGGTAATTTCTTAATTGTAGAACTGGCCTGTTTGGTGAAGTATTTTCAG
GAAATTTTTAGCTGGACCTTTTCTACCCTACTGCATAAGAAATGAAGGTTTCTAGGCAAAGACTTTACT
TAGTGACTAACCAAAATGGTAAATAAAGTACCCGCTTCCAGGCTTAGCTACTGTCTCAAACAGCTGC
AGGATGGTCAGGCCAGTCTTCTGAGGCTGGAGGTGCATGTGGAACCCCAAGAGCCTTGTCTGCAAGGGC
ATGGCTGACTGCAGGCTGTTTAGAAGCACCCCGCCCGTGAAGTCTCTGGCTTAGGAATTTTAAACAG
TTCTAGTTCTAATCTCTGCTCAGAGTCTGAGCAGCTGTGAATGAGCTCTCCTGTGAATCACAGAAATG
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CAGTGAGTTTGATTCCTCTTTTGGGCAGCAGGGAGAGATAATGAAGGAGGGGAAAAAGATTTTAATAT
AGAAACGAGTCTTCCATCTGGCTGAGGCTGAACAAAGTAGAAGAACCAGTGCAAGTCACTGGGGGTATGG
ATCTCATACCATTTTCAGCATATACCTCCCTTCTCTCTTTTGTATTCTACACATGTCAGTCCCTGAGTA
GTCCTTGCAATGCTTTCCCCACTTTGAAGTCTTAGATCCAAACTCTGATTCAGAAAGGCTTAAGGTGCT
GTTGCTGAGATTTTGAAGAGACCTGAGACAAACTGTTGGGATTCTAGACGCTATTGCGCATCTGCCTGG
GTAAGTGTGTCACCTTAGGTTGGGTCCAGAGATAATCTCCTCCATTTTGTGCTTTTCAATTTATATA
ACAACACAGAACATCAGTGGTCTCCCATATAATCAATATATTTGGCTCTATTAATATTTAAATTTGATCT
TGAGTAGAAAGATTCTAAGGGCTAAAAAATAAAGATGTAAATGTATGTTGATAGGTTAGGTGTAGAAGC
CACCATGGGGTGGCCCCACTCCCCTCTTTCATATTTTTTAAAGAAACAACACTCAAGTTACAAAGT
CGATTTCTTTTGTGTTTATTTGAGACTGAGTCTCAGTCTGTGACACCCAGGCTGGAGTGCAGT
GGTGCATCTTGGCTCACTGCAACCTCTGCCCTCCCGGTTCAAGCGATTTTCTGCTCAGCTCCCAA
GTAGCTGGGATTACAGGTGCCCGCCACCACCCAGCTAATTTTGTATTTTGTAGAGATAGAGACAG
GGTTTCACTATGTTTCCCATGTTGACCAGGCTGGTCTTGAAGTCTGACCTCAGGTGATCCACCCGCT
CAGCTCCCAAGTGTGGGATTACAGGCTGAGCCACGCCCTGGCCACAAAGTCAATTTCTTAACCT
AAAACATAAAAGTTCATTTCTTTTATGGTCTACTTAGTCTGTCTGGAGTCACTGAGCTCAGTCAAGTA
GTTTGCAGAAATGACAGTGTGTATACCTATTCAATTTACCACAGATTTATTTCTGCTCTCCCATGGCAGT
TTATAGAAAACAGTTTATTCGGTCAATTAACAGCTCTAGGAGGGGGTTTCATTAAACCCACTTTCTAGG
AAAGCGAACTAAGTGTGGGATTACAGGCTGAGCCACGCCCTGGCCACAAAGTCAATTTCTTAACCT
ACATGAAGTTAGGACAATAACTCAAGGTCTTGGTCCCTGTAATATGGGTTTCCAGGTTATGTATGCAGG
CAGAGGGCTTAGATCCTGAAGTTTCCCTTCAGAACTTCAGGATCTAAGCCCTCTATATAGGAGCAGTATA
AAAGGAAGGATCTCTTCCCATAGGGAGCTTGTCTATCCATTGAATGAGGAACCTCAGACTTCCACTGTGAA
ATGATATTTGTATCCCATTTGTGTGAGATATGGGACTCTGATCATATAAGAGCAGATTTTCTCTGC
CTATAAATGATCTTAATAGAGCTGACAGATTATATATATCTGGAACACTTTTACCTAGCAGAAAGCAA
CAGGCTAGGATTAGCTGACTAATAATTTTATTTATCAAGCTCAATCCCATGCTGACTTCTCTCTCTA
GTGAAATGTGTCTCAGATTTGGTCCCAACTGGAGAGGTGAAAGGATCCTTTGACCAGTATAATAGCC
ATGCCATCAGTTTGTCTTCTTAATTAAGTTTATATGGGTTAATGATCTATATCATTATTTTGGGGGT
TCTAAACACATATAAGATAAAGATGGAAGATGATGGAAGATGGAAGAGATGACTCAGATGTACACA
AAGGCTTGACAGAGAGAGGATAAGCCAAAAATTTGGTAAATCACACATGAATAATCAAGAACTGACTACA
ATATAAATATATGTCTCAATTTCCACTAATGAATAAGCTGCCATTATGTCTCTTCTCTCTATTTAGGA
CAAAATTAATCTCTGCTGTATTTCCATTCTTACAGGTACCTATCTGCTGTGATTTTCCAGTTTGTACT
TTATCTTGTGTTTGTCTTGTCTTGTCTAAGTGAAGCTGCAACCCAGTAAATATATTTCCAGTATTGTTAT
GTAATCTCTGCTTTATGTCAAGTGGCAAGAGGAAGGGACTGGTTTATTAATTTATCAGTCTGGGTGTG
TGCTAAGAGGATCCTTAGTACATGCTTTGATTATGGTAGATGAGTCTAAAGATTTCAGCTGGTTATTC
CATTTATTTTGGTCTGTCTACCTAACCAAGGTCACACAGTGGATTATACTAGTTTCTATGTGTATTTG
TTGCCCTGACACATATAAGATAAAGATGAGAGGTACCAAGATTTCTGTACAGTCTGAAGCTGTGTGTGTA
ACAACAGTGAAAAATCTTAGTTATTTGGACTTTTGGGTTCCATGATGCCAGAGAAAGCCAGACACCAGC
AGCTGGAATCAGCTAAGACCTAAGACCTGCTATGCACATATAGATGTTTACATTTTCTTCTTATGCGAC
ATTACGCCATTGCTTTGGCGCTATTTCAATAATATATTGCTGCTCATCAAGTGGAAATAATGTTTGT
TACTAGCTGAGTATTGAAAAGCTCTTCATAGTTTGTGATTTTGAAGTCTCAACATGCAGGACCAT
TTCTTCACTGACTTTGGCAACAGGAGAGATTGACTAGTGGGCTTGAAGTATCCACTGCTGTTTCTGT
TTAATTTCTTCAATCCTACTGGGCTTGGGAAGAAGAGGTAGCGGCATCCTTGTGCTCAACAGG
AAGCACAAGGCCATCCAGGGCGGGCAGGAGAGAGGTGGGAGGGAAGAAGCAGGCTCCACAGGGCCATT
GTTTACCTTGTGTGCGGGTCAAGTCTTCTCAGGTTAGGGTCTTGGGATAAGAGCAAGCTTATTGGTTT
TCCTTGTGTGCCAGGAGACACACCAGATCACCCTGACGCTTGGCTTGCCTTCCACAGCCTGCCCTT
GCCTAGGGTTTCAGCTGATATCCTTCTACTCAGGAGGAGAAACCACAGAACATGGAGGAAGTGTTC
CAGTGTTAAGACTTTAGACCAACTATAGAAATCTGTTCTACCTGGAACCTGAAGAAATAATCATGAC
TGCTACTCAGTAGAAGTAAATAAAAAACAGCTTTACTGTTTGGAAATCATAGGAAGGCTTTCTGTATA
GCCTCTCTGAGAGCTGCCTACTGGAAGGATTTGTCTCAAAACGTGAGGATTTGTGGTGTTCAGGGTTT
ATATGACACTGGCAGGATAGTTTGTAGAGGCTGTGCTTGCACCTTATCCAAGGGATGTAAAGCCGTGT
GTTTAGGTTAGTGAGCGCTAGACAAAGCTCTAATGTTGAAGGAGCATTTGGAGGCAGGCTGTGCCTCTG
AACATGTAGAATTGACTAGAAATGCCAATGTTTCAATTAAGAAATGAAATCATTATCTTTCTTATGCTTCCA
TTTAAAAATGATTATTACATTTTTCATATGTTTGAATGATATTAATTTTGAAGATTTAGAAAGAGA
TAAGCATAAAGACATACATAAAAACTACTTATCTCATCAGCTATAGATAATCACTAACAATATTTTAGG
ACATTTTCTTTTCTCTTTTCTTAGCAATATGTATGTGTGGGTATACATATTTAAGTGTGTATATAT
GTAATTTAAAAACATAAAATATTTCCACAATATAATTAATAAAAACTAAGATACAACACAATTTCCGT
TTGTAATATGTATGTATATATGATATATACATTTATGTATATATAAAATACATGCATAAAATAGA
TACACAGGTATATATTTTGCAATTTGAAATGATGTTGTATCTTGTAGATTTTATTTAATTTAGATTTA
TTTACACTACTTAGGTGTTTAAACAGGATTTGTGGTCCACCATTTATTTCTTAAAGATTAATCCAAAA
GTGGAATAGAATGTCAAGGGGCAAGTTCTTTATAAGTCTTAAAGGATTTGCCAGATATATTTTTT
TTTACTCTTTTAAACATGATTTGATTTTGAAGTTCTCTTTAAAAATTTCAAGCAAAAAATTTTCA
AATCCCATCTAGAAATCAATCATGATTTTATTTGGCTATGCCCTTGTAGTCTTGTCTATGAATTTAT
TCATTATTAATATAATAGGTAATTTCCACTAATTTGACAGATAGAATTTTATTTTACATTTTCTCT
GTTACAGTGCCATGCATATTTCTATTATGTTACAGAGATCTTGGGGTCTTTTTCTCTCCCTTTTCTCT
TTCTCTTTTCTGTGTTGTTACCCCTTCCAGAAACCAACAAATACAGGTTGATGTGTATCTCTACTCTT
TTCTCCATGCTCACACAACCAATATTTACACATGCACTGATTTTTCAGGGCAATGGTCTCTTTTATCA

FIGURE 1, page 14 of 93

15/139

TAAATTGTGGGATAAGGTTATATACATAATATATGTGTGTGTATTACTCTGAATCTTGGTTTTGTAC
TTTGC AATATGTCTTAAAGATTCTGATAAATCTTATAGATCTATCTATTCTTTTCAGTAGTTGCATGCA
GTATAAATTTACTATAACTTTATTCAGTAATCTGCTTTTCAGCTGATACTCTGTTGTGAACAGTTTTCAAC
ATATAAAAAAGTGCCTGTCATTACAAATATTCTTAGATATATATCTTAGTAATTTGGGGGTTTTATTTTAA
TGGTGTAAGTCCCAGGAGTAGAATGCTGGTTTAAAGGTATGTGTATTTTACATTCTATTTGGTTTTT
TCATATTATTTTCTAAAAATATTATAGCAAAATCACAGTCCCAGTGTGTTGGAGAGTATCATTTTTCC
TCAGTAGTACTCCTATTTCCCTGCTTTCTAATCTTTCTGATCTAATGAGTAAGCATGTGTAATTTTCTT
TTCTATTTTCTTGACTTCTAATGAGCTTAAGCATCTTTTTCACATTATTTGTTGTTCTTTTGGATTTTCTTAT
CTGTCAATTACCAATGGATATCCTTGACCTATTTTCTCCCTTATATGGTTGCTTTTCTCTTATTAATAAAT
TGTAAGTTCTTTGACTATTACAGATTTTAAAACTGGCAGATAAAGTTGTATGATTATTTGTGTATAA
TATGATATTTTGGATATACATATATCTTGTATATATCAATATCGAGATATATATATCACACGTTGTGGAA
TGGCTAAATATAGCTAATTAACATGTGCGTTACCTCATGAAGTTATCATTTTTTGTGGTGAGAACACTTAA
AACCTCTCAGCATTTTTCAGAAATATAATATATTGTTATTAACTATAGTCACCATGTTGTACAGTGGATC
TCTTGCACCTACTTTTCCGATTTAACTGAAGTTTTCGCATCCTTTGACCAATGTCTTTTCCAACCCCTCACCT
CCCAACCCCTCTGCCCAGACTGCCCCAGCCCGGTAAACCACCATTTCTACTCTCTATGTCTATGAGATCAA
CCTTTTTAGACTCTACATATAAGTGAATCTTTTGGTATTTGTCTTTCTGTGCTGGCTTATTTTCACTTA
ATATAAGTGTCTCAGGTTTATCCGTTGTTGTCGAAATGACAATATTTTCTCTTTTTTAAAGGCTGAAT
GGTATTTCCACTGTGAACATATACCATATTTTCTTTATCCATTCATCTGTTGATGGATACCTTAGATTGATT
CTACATCTTGGCTATTATGAATAATGCTGTAATAAACATGGGAGTGCAGATATGGCTTTGACATACTGAA
TACATTCGCTTTGGGCATATACCCAGTAGTGGGACTGCTGAGTCATTCGGTAATTGTATGATTACTGTTT
TCCATAGTGGCTGTACTAACATACCTTCCCCTAACAGTGTGCAAGGGTTCTTTTACTCCGCATCCTTTG
CCAACACTTTTAACTCTTTTGTCTTTTCTAATAACCATTTCTAACAGGTGTGAGATGATATCTCTTTGTG
GTTTTAAATTTCCATTTTCTGATGATTATAGTGTGCTGAGCATTTTTTCTATAGATTTTTTTTTTTTTGGT
CAGTGGATTGCTAAATCTTACCCGCTCAATAATTTCTCTTTGATTTTACTTTTATAATTTTCTGTGACA
AAATTAATAAATAATTTGATGAATAAATTTTCTTCTATACGTATTCTGAATTTTCTTACTTCTTCTT
AAAGAGTCTTCCACCTCCTATTTTCTAATAATTTTCTTCTAATAATTTCTATGTTTTATTTTATTTATTTT
TAATATTTAGTATTTTTCATCTGGAATTTTTTATATAAAGTGAAGGCTCAACTGCATCTCTTTT
ATATAAAGAACGAATTTTAAACATCACATGTTAAATAATCTTTTCTCCAATAAATTAAATATATTAG
CATCAATTTAAAGATTTTTTCTAATAACCACTAATCTATTTATTTGTTGCCAGGCTGAGACGTATTG
CTTTGATTATAATAGCTGTATAGTCTCTTTTAAACATTTGGCAAGTTGATGCTCCCTACTCATTAATATT
ATTTATAATGTTAGCCTGGTTTTCTTTTTTTTTTTCAGTCCAAATAGGATTTAGTCAGAAGAAAGATAC
GTGGATTACATTTTAAATACTGATCAAAATGAAGATGCTCAACCGTATAAATGGCAGATGAATAGA
CTTTAAAGTAAAAAATATTATCACACAATATATCAGAAAAATATAACAAACCCGAACCAACAAACATCA
GCAACGATCTCAAAATATTAGCTTGAACATGAATTTGCCAATAGTTGACCACTTTTGGACCTACAAA
AGCAACAATTTATATAAGAAAAGGTCAATAAATTTATGGTAAATTTGAATTTTTTTTTTATTATTACACTT
TAAGTCTGTGATACATGTGCAGAACGTGAGGTTTGTACACAGGTATACACATGCCATGGTGGTTTGC
TGCACCCATCAACCCGTCATCTACATTAAGTATTTTCTCTTATGCTATCCCTCCCTAGCCCCCACCCT
CTGACAGGCCCCAGTGTGTGATGTTCCCTGCTGCTTCCACTTATGAGTGTGGCGTTT
GTTTGTATGTTCTGTGTTAGTTTGGCTGAGAATGATGATTGCCAGCTTCACTCCATGTCCCTACAAAGGACA
TGAACCTCATCTTTTAAATGGCTGCATAGTATTCATGTTGTATATGTGCCACATTTTCTTAATCCAGTC
TATCATTTGATGGGCATTTGGGTTGGTTCCAAGTCTTTGCTATTGTGAATAATGCTGCAATAAACATACAT
GTGCATGTGCTTTTATAGTAGAATGACTTATAATCCTTTGGGTATATACCCAGTAATGGGATTGCTGGGT
CAAACGGTATTTCTAGTCTAGATCCTTGAGAAATTGCCACACTGTCTTCCACAATGGTTGAACATAATTT
ACACTCCCAACAGTGTAAAGCATTTCTATTTCTCCACATCTTCCAGCATCTGTTGTTTCTCTGAC
TTTTTTTTTTTTTTTGGATGGAGTCTCACTCTGTTGCCAGGCTGGAGTGCAGTGGTGAATCTTGGCT
CACTGCAAGCTCCACCTCCCGGTTTCAATGCCATTTCTCTGCTTCCAGCTCCCAAGTAGCTGGGACTACAG
GCGCCCCCATCATGCCAGCTAATTTTTTGTATTTTATAGTAGAGACGGGTTTCACTGTGTTAGCCAGG
ATGGTCTCGATCTTCTGACCTCGTGATCCACCTGCCTTGGCCTCCCAAGTGTAGGATTACAGGCGTGA
GCCACCCGACCTGGCCGTGTTCCAGACTTTTTAATGATACCATTTCTAAGTGGTGTGAGATGGTATCTCA
TTGTTGGTTTTGATTGTCATTTCTAATGACAGTGATGATGAGCTTTTTTCTATATGTTTGTGGCCGC
ATAAATGACTTCTTTTGAAGAAGTGTCTGTTATATCCTTCAACCACTTTTTGATGGGTTGTTTGTCTT
TTGTATATTTGTTTAAAGTCTTTGTAGATATTAGCCCTTTGTGAGATGGAGAGATTACGAAATTTTTCCCC
CATTTCTGATGTTGCTGTTTCACTGCTGATGATAGTTTCTTTTGTATGCAGAAGCTGTTTAGTTTAATTA
GATCCCATTCGTCATTTTGGCTTTTGTGTCATTTGTTGTTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTT
GCTTGTGCTTAAATGGTATTGCGTTGTTTCTTCTAGGGTTTTATGTTTTCGGGCTTACATTTAAG
TTTTTAATCTTGAGTTAATTTTTGTATAAGGTGAAGGAAGGGATCCAGTTTTCAGTTTTCTGCATATGGC
TGCAGTTTTTCCCATCACCATTATTAATAGGGAATCCTTTCCCATTTGCTTGTTTTTGTGAGGTTT
CCAAAGATCAGATGGTTGTAGATGTGTGGCGTTATTTCTGAGGCTCTGTTCTGTTTCCACTGGTTTATAT
ATCTGTTTTGTT
CATGATCCCTCCAGCTTTCTTTTAGCATAGGATTTTCTTGGCTATACGGGCTTTTTTTTGGTTCCATATG
AAATTTAAAGTAGTTTTTCTAATTTCTATGAAGAAAGTCAATGGTAGCCTGATGGGGATAGCATTGAATC
TATTAATTTACTTTTGGCAGTGTGGCCATTTTCTATGATATTGATTCTTCTATCCAAGAGCATCGAATGTT
TTTTCCATTTCTTTGTGTCCTCTCTTTTTTCTTGGAGTGGTTTGTAGTTCTCTTGAAGAGGTCCTTC
ACTTCCCTTGTAAAGTTGTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCT
TGATTTGGCTCTGTTTGTATTACTGTATAGGAATCTTGTGATTTTTTGCACATTGATTTTGTATCCT
GAGACTTTGCTGAAGTTGCTTTTTCAGATTAAGGAGATTTGGGTTGAGATGATGGGTTTTCTAAATATA
CAATCATGTCATCTGCAACAGAGACAATTTAACTTCTCTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTT
CTTTTGCCTGATTTGCCCTGGCCAGAACTTCAATACTATGTTGAATAGGAGTGGTGAAGAGGATATCCT
TGTCTGGTGTGGTTTTCAAGAGAATTTCTCCAGCTTTTGGCCATTCACTATAGTATTAGCTGTGGGCT
TGTCTAGAAATCTCTTATTATTTTGGGATGTTCCATCAATGCCCTACTTTGTTGAGAGTTTTTAGCAC
GAAGGGGTGTTGAATTTTATTGAAGGCTTTTTTCTATCTATTGAGATAATCATGTGGTTTTTGTCTATTG
GTTCTGTTTTATGTGATGGATTACATTTACTGATTTGTGTATGTTGAACAGCCTTGCATCCAGGGATGA

FIGURE 1, page 15 of 93

16/139

AGCTGACTTGATTGTGGTGGACAAGCTTTTTGATGTGCTGCTGGGTTTCAGTTTGCCAGTATTTTATCGAG
GATTTTTGCATCAATGTTTCATCAGAGATATTGGCCTGAAATTTCTTTTTTTGTTGTGCTCTGCCAAGT
TTTGGTATCAGGATGATGCTGGCCTCATAAAATGAGTTAGGGAGGAGTCCCTCTTTTTCTATTGTTTGG
ATAATTTTCAGAAGGAATGGTACCAGTCCCTTTGTACCTCTGGTAGAATTCGGATGTGAATCCATCTTG
TCCTGGGCTTTTTTTGGTTGGTAGGCTATTAATTCCTGCCTCAATTTTCAGAACTTGTTATTGGTCTGTTT
AGGGATTTGACTTCTCTCTGGTTTGTCTGGGAGGGCTATGTGTCCAGGAATTTATCCATTTCTTCTG
GATTTCTTAGTTTATTTGCGCAGAGGTGTTTATAGTATTCTCTGATGGTAGTTTGTATTCTGTGGGATT
GCTGGTGATATTCCCTTTATCATATTTAGTGTGCTATTTGATTTTTCTCTTTCTTCTTATTAGTCT
GGCTAGCAGTCTATCTATTTTGTAAATCTTTTCAAAAAACCAGCTCCTGTGTTTCATTGATTTTTTTTGA
AGTTATTTTGTGCTCTGCTCTCCTTCAGTTCTGCTCTGATCTTAGTTATTTCTTGTCTTCTGCTAGCTT
TTGAATGTGTTTGTCTTCTCTAGTTCTTTTAAATGTGATGTAGGGTGTGAGTTTGAGATCTTTC
CTGCTTTCTCTTGTGGGCATTTAGTGCTATAAATTTCCCTCTAAACACTGCTTTAGCTGTGTCCCAGAGA
TTCTGGTATGTTCTGTCTTGTCTCATTGGTTTCAAAGAACTTATTATTCTGCCTTAATCTGTGATC
TTACACAGTAGTCATTACAGGAGCAGGTTATTACATTTCCATGTAGTTGTGTCAGTTTGTAGTGAGTTTCTT
AATCCTGAGTTCTAATTTGATTGTCAGTGTGGTCTGAGAGACTGTTAGGATTTCCATTCTTTTGCATTTGC
TGAGGAGTGTTTACTTCTAATTTATGTGGTCAATTTTAGAATAAGTGTGATGTGGTGTCTAAGAAGAAATGT
ATGTTCTCTGGTCTTGGGTGGAGACTTCTATAGATGCTATTAGGTCTGCTTGGTCCAGAGGTGAGTTT
AAGTCTGAATATCCTTGTAAATTTTCTGTCTCATTGATCTGTTTAAATATTGACAGTGGGGTGTAAAGT
CTCCCGCTATTATGTGTGAGAATCTAAGTCTCTTGTAGGTCTCTAAGAACTTGTCTTATGAATCTGGG
TGCTGCTGATTTGGGTGCATATATATTAGGATAGTTAGCTCTTCTCGTTGCATTGATACCTTTACCAT
ATGTAATGCCCTTCTTGTCTTTTTGATCTTTTGTGGTTAAAGTCTGTTTTATCAGAGACTAGGACTG
CAACCCCTGCTTTTTTTTTGCTCTCCATTGCTTGGTAAATCTTCGCCATTCTTTATTTTGGACCTAT
GTGTATCTTCTGATGTGATATGGGTCTCCTGAATACAGCACACCAATGGGTCTTGACTCTTTATCCAGT
TTGCCAGTCTGTGCTTTTAACTGGGGCATTTAACTGTTTACATTTAAGATTAATATTTTATGTGTGA
ATTTGATCTCTGCTATATGATGCTAGCTGGTTATTTGCCCATTAGTTGATGTCAGTTTCTCGTAGTGTG
ATGGTCTTTACAAATTTGGTATGTTTTTGCAGTGGTTGGTACCAGTTTACCTTTCCATATTTAGTGTGTT
TTTTAGGAGCTCTGTAAAGGCAGGCTGGTGGTGAGAAAATCTCTCAGCATTGCTTGTCTGTAAAGGAT
CTTATTTCTCTTTCATTTATGAAGCTTAGTTTGGCTGGATATGAATTCAGGTTAAAAATCTTTTCTT
TAAGAATGTTGAATATTGGCCCCACTCTCTTGGCTTGCAAGGTTTCTGTCAGAGTATCCACTGTTAG
TCTGATGGGCTTCCCTTTGTGGGTAAACAGACCTTTCTCTCTGGCTGCACCTTAACATTTTCTCTTCT
TCAACCTTGGTGAATCTGACAATTATGTGCTTGGGGTGTCTTCTCGAGAGTATCTTTGTGATGTTCT
CTGTATTTCTGAATTTGAATGTTGGCTGTCTTGTCTAGGTTGGGGAAGTTCTCTGGATAATATCCTGA
AAAGTGTTTTCAACTTGGTCCATCTTTCTGTCACTTTACAGTACATCAATATAGGTTTGGTCT
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TCATGCTTTATTTCAAGTTGATCTTCAATCTCTGATATCCTTTCTTTTGTGTTGATTGATTACAGTATTGA
TACTTGTGATGCTTCTATAAAGTTCTTGTGCTGTGTTTCTCAGTCCATCAGGTCATTTATGTTCTGCTC
TAACTGGTTATTTAGTTAGCAATTCCTCTATCCTTTTTTCAAGGTTCTTAGCTTCTTGCCTTGGGTT
AGAACATGCTTCTTACGCTCAGAGGAGTTTGTATTACTCACCTTCTGAAGCCGGCTTCTGTCAATTCAT
CAAACCTATTCTCCATCCAATTTTGTTCCTTGTCTGGCAAGGAGTTGTGATCCTTTGGAGGAGAAGAGGT
GTTTTGGTTTTTGAATTTGTACGCTTTTGTACTGGTTTATTTCTCATCTTCTATGGATTTATCTACCTTT
GGTCTTTGATGTTGGTGACCTTTGGATGGGTTTCTGTGTGGATGTCTTTTTTGTGATATTAATGCTAT
TCCTTTCTGTTTGTGTTAGTTTCTTCTTAAAGTCAAGTCAAGCCCTCTGCTGCAGGCTGCTGGAGTTTGTCTG
AGGTCTACTCCAAACCTGTTTGTCTGGGTATGGAGGCTGCAAAACAGCAAGATTGCTGCCTGTCTCTT
CCTCTGGAAGCTTTGTCCCAGAGGGGACCCACCAGATGCCAGCCAGAGCTCTCTGTATGAGGTGTCTG
TCAACCCCTGCTGGGAGGTGTCTCCAGTCAAGAGGCACAGGAGTCTGGGACCACTTGAGCAGGTAGTC
TGTCCTTTAGCAGAGCTCAATATTGTGCTGGGGATCCGTTTCTCTCTTTCAGAGCCAGCAGGCAGGAAT
GTTTAAATCTGCTGAAGCTGTCTCACAGCCGCCGCTTCCCCAGGTGCTCTGTCAGGAGAGATGGGAG
TTTTATCTATAAGCCCTGACTGGGACTGTGCTTCTTTTCTCAGTGTGCTTCTCCAGAGAGCAGGAAT
CTAGAGAGACAGTCTGGCTACAGCAGCTTTGCTGAGCTGCGATGTGCTTACCAGGTTTGAACCTCCTGG
TGGCTTTGTTTACACTGTGACAGGAAACTGCCTACTCAAGCCTCAGTAATGGCGGATGCCCTTCCCTCC
ACCAAGCTTGAGCATCCAGGTCAGTTCTGACTGCTGTGCTGGCAGCGAGAATTTCAAGCTCATGGATC
TTAGCTTGTGCTGGCTCTGTGGGGTGGGATCCACTGAGCTAGAACATTGGCTCCCTGGCTTACGCCCCCT
TTTCTGGGGAGTGAATGGTTCTGTCTGCTGCGATTTCCAGGAGCCACTAGGGTATGAAAAACAAAACCTC
CTGTAGCTAGTTCCGTGTCTGACCAATGGCTGCCAGTTTTTGCTTGAACCCAGGGCCCTGGAGGCAT
AGGCACCAAGGGAGTCTCCTGGTCTGCACCCAAAGGAATCTCCTGGTCTGTGTTTGAAGACCATGG
GAAAAGTGTAGTATCTGGGCAGGAGTGCACCGTTCTTAGGGCACAGTCCCTCAGGGCTTCCCTTGGCTA
GGGGAGGGAGTTCCCTGACCCCTTGGGATTTCCAGGTGAGGCGATGCCACCCCTGCTTTGGCTCACCTT
CTGTGGGCTGCACCCACTGTCTAACAGTCCCAATGAGATGAGCTGGGTACCTCAGTTGGAAATGCAGAA
ATCACCTGTCTTCTGCGTTAATCTCACTGGGAGCTGCAGACTGGAGCTTCTTCTTATTTGGCCATCTTGCC
CCTTGGTCTGGTTTTCAACCTTCTAGTCTTCCATATTTATTTGAATGAATTTTCTGCAGCTTTATTA
AAGAAATAGAAACAAAGTAAAGAGCAAGCATAGTTGGTTTATGGTTGTAATAAACTTATATGTATGCTCTAA
TGATTTGACAGCTTTGTGATAGTATCTTGAATCCAGTACATGATATATTCTACATTATTAGATCTT
GTGTTAGGTTTCTTCCATAAGATTAATTTCTCATATTGGCTTCTTGTCTATGTTTCTTTTAGCATAAA
GCTAATCCAGGAAAGGAATAAACTGGAAGGAAAAATGTCTTAAACCATTAATATTGGCTGACCCCGG
TGGTAGGGTTATGAATGAACATTTTGTCTTCTCCACTTTTTTATATTTTCCAAATTTGCCATATTAAT
CATGTATGATTTTTATAATAATAAATTAATGAATTTAAGAATTAGATAATTGATTGAATTGGATAATTG
AATTAATAAAATTTAAGAAATGAGAAATAGGAATAATGTGCTTTGAAAAGTCATATACACAAGAGTTT
ATGGAATTCATACTAATTTATATGCTATACTAAATCAGTAATTTCTCAAGGAGCAAGGTGCTGGGAG
TGTGGAGGAGCTCTTGTGGTGTGTCACATACAATTTAAGACAACATTTTCTTATTTCTCACCATTTT
AACCATATCACCTAACAGCCTCTGGTAGCACTCAATAGACATCTGATGAATGAATGAATAAGTGAATGA
AAACATTTGACAAAAATGGTATAACATTTGTATTTGAAAAATATATGAAAACTATTCTTTTCAAATAT
AAAAATGGGAAAAATCAATAAAAAATATCTTGGTTGGTGAGAATACAAAAAGATATACCTTCTTGT

17/139

CTATGAATTAGTAATAAGAAATTGTCTTGAGGAAGTCAACTACATCTGGAAGGTTCTCTCTGGACAAGGA
GCATAAGTGAAAAACAGTGCCTAATTATTAACCAAGAGTTGCAACTTACCATTTTAAATGCTTCAGCACA
GGCAGAGAGACTAACATTACTAAGCAAAACAGAGTCTTGCGCAAGTTAATTAAATATGAATTATTTT
GGTGACCAAGGAGTTGGGCTTCTCATTTTAAACCATGCATGAGATTTTCCCTTTCTACCCATTACTAA
AATATCGTATTAGTGTGAAAAATTATACCAGGACTGGGAGAAAAAGAAATCACATCTGTCTTGACAATG
GGCTGAATGAAGAGGTGAAGGAGTGGTTTACTATCTAAGTGAAGTAAAAATAGGTTATGGTGCCCCAGC
AAATCCTTGTGTGTTGCTGACAATTAGTGTGTCTGTTTAAATCATGCAGTTTATTAGGCCCTAAAAAT
ATCTTTTAGTTAGTTTCAATTTTCATCAAGGAAAAAGGAGAGCAGAGTAGAGTGGAACTCTGTCTCAGAGTC
CGGTTGGAAGCCTTCAACTTGTCTCCCTGTTTTTCAGATGAGTGTCTATTTGTGGCTCTACCTTTTCTC
TTTCTTCTCTTACCATGACACTCCCTCTTCTCTTATCTTAGCTGTCTTTTCTTCTCCGCATATTA
GGCAGTGGGAGAAACACCTTAAATCAGTTGGAGGTGAGGAAAGAAAGAACCCCTATCTTGGTAGTT
CCTCATCTTCCCTTCGTCACGTCATGTCATCAGGCTCTGCCTTCATCTGCGATCTGGATACAATCCAA
TTTATAGCTACCATTTCAACCAAAAAATATTGAGCTCTTACTATGTCAAAGTAGTGTCTGGATGCTCGGC
TCCATCAGTAACAACCTAGACTAACATCTTGCCGTTGTTTACATCTCGTGGTGTAGAGTTTACACCTTG
TGGTCTAGAATTTACATCTTGTGGTGGAGGCAGGCAGATGATTAACAATAAAGTAAAGTAGGCTTAGATG
TCAAAAGGTGGTAAATGCTACAGGAAAGAGCAAGGTGAGCCAGGTAAAGGCAGATGGCTGTGTGGGTG
TGGAGGAAGGGTCAAGAGTACTGTCAAGATAAGCCTTCTGAGAACATCTGAACAGGACATGAAGGAC
ATGAGGAAGTGAGACAGTCGCTATCCAGGGAAGGAATTTCCAGGCAGAAAGAAAGGCCAGTTTACACCT
TAAGGTGGGAGCATTTCTGCGAGACTGGAGAATCACTGGAGTCCATGTACTTGGAGCCAGCAAGGGAG
AAAAGATTGGAGGACTCAGGAGGTGCTGGGGCAGGTGAAGTGTCTTTTGATTTGGGGAGTTTACAGGGTAA
TGCTTTGGATAAATGTAACTGAAACTTTTCTCAGAAAGTGTCTTCTACTATCTCTACAATTCATTTTCAT
GTGAAAACCTTAATTGGCGAGCAGATTAATATGGTGATCTTCCCTTAGATCACTAGGAAATCTTGTTTTA
TGAATTTTCTTCCCTTTTCACTACTAGCAGAGAAAGAGTTGTAAAGGAGCCGAGAAAATTTAGTA
GGTTTCTCCCTACTACTGAGCTACTGAGACTGGAAGATGCTCAGCTTAGCAACTGAGTATATTTATGTAT
TCCCTTTAATGTGTTGAAGGGTCAGGAATATTGACTTAGGATACTAGTCTGTTTGAAGAACATGATTCAA
CTAGCTACATGACTAACTAGCAGCTGTGAGAGAAATGCAAGGTCAAAACTTAGTAGTTGATAAATA
AAGAAAGGGCAGAGTGTATGAATGTATGATCTGGGTAAATCCATTGGCTCACTTTTTTTGTGACGCT
AAGGTTACAAGATGATAAATTAAGTTGCTAATATCTATATCTACCATTACTTTTTCTTTATCATGTGT
CTGGCAATATGCTGAGTGTCTACCTCTAGCATTTTATTCAACTGTGCAATCTGCCTGTGAAACAAGT
ATCATTAACTTCATTTCCTAAGGTGAGAAATTTAGGCCCCAGAGAGGTTAAATAAGTTAGGATCATATG
CATAGCTGGTAAGTACTATACTTTAATATCCCTTTGCCTTCATGCTTTGCTCTCACTCCATGTTTAAATG
AGCAGAGAGACTTATCTTTAAACAGATATATAGCAAGTAGTATTTTCCAATGAATTCACAAGATGCTC
CATTGCAAAAGTTCAAAATAGTTTAGAAAAATGCTGCAAACTTTGTGCTTCTTAAGAGATTACAGTGCA
GATTAGCACATTAAGGCTTTGGGAAATTTGTATTAGAAAAACCTTTATTAACCTATTACCCCAATTTT
TCCAAGCTTTTGTATCAGCAAACTCTTTAAAAACAACAAGTATAATTGCTTTTATAGTATTCTTTGGGA
TACACTTGGAGAGGTGTACATGAAAAGATATGATTGGATAAATTTAAATATAGGAAGAAATTTTAAATC
ATTTTGGAAATAAACACCAATTTTAGGTTGTCTAACATACATTTGAGCCAAGACATGAAGGACATGAG
GACATAATTTACTTTTGTCTTGAAGGACATAATGCACCTTTTAGTGGTTGCAATGTTTATTTTCTTTT
GAATTTCATGTTACTTTATAAAGGTAATTAATTAATCAAACCTTTGTTAAGTGTGACACACTATGGTAG
GTGCTGGTAATATAAGAGAAATATGTAACATCAACACACATATCTCCTAGTATGGGCTTACAGTACAG
TGAGAGACACAAACAAATAATTTGTAGGATTGAATAAGTCTTACATTTGCCACATCAATAAGGCACTAT
GGAAACAAAGGTCACAGCAAACTTAACCTTTGTCCAATGAAGTCTTTTCAAGGAGGAGGTGATTTGGAGCTGAA
TTTTAAAGGATTCATAGATGTTTATCTGAAGGACTAATGCAACATGTTGGAGGTGAGTCTTCAAGGAAGA
GGCAACAAGAACCTTTGGGTAACAAGATAGGACTTGGCAAGTTAGGGGAGTCGTAAGTGGTTCATTACG
GCTAGAAATCCAGGGCTCTCTGGAGAGATTGGGAGTACACAGATCACTCAAGGGTTGGTATGAAGTGTCA
GGCTTGAAGACAGAAATAACAAAAATCAGATGTGGGTTTGAAGAGCATTTTGGCTGTAATACAGAAC
ATGATGGATAATTGATGGAGCGAGATTCTGGGAGATAGAAGAGGATAGGGCCATGTAAGTACATCTGC
TGGTATTTTAAATTAGAAAAAGAAATTTTGGTAGCAAAATCAGAACAGACCCCAACTCTTTGCAAA
TCATGGGACTAGAATGTTTGGAAAGGAAGATGCTAACGATTTTCATTCAATTTGTTTATCATCTATGTTGA
GTGCTTCTTTGGGCTTAGGCAGCATGCCAAAGCTGGGAGAAATAAGATACTGTATGAGATGCTAGAAGA
TCCCCACCTCTCTTTCCAGAAATTCAGTATATCAGACTAATTTGGTTTACAGTTGTGACCATGGGCTTTT
GGCATAGCTGTTCAACAAGATTTCATCTTTTCAAAAGCAATTCATTATCCACCAATATTTGTTAAA
CAATGTACGTTGCATTGTAGTGGGTCTCAGGAGCTGGATGTACATGCCAAATATGTTTCATTTTATT
TGAAGCAAGTCCACAGACAAGTAACTAGTCAAGTGATACAGGCAAGGTGATTTGCTTTCCAACAGATG
GTGACAGATTAATTTCTAAGAGACTGATCTGCCCCAGAGGCACTGGGAAAGTCTTGTAGGGAGGTAGA
TTATAGTCAGGACCTTGGAAAAATTGTTGGGAATAATTGAGGTGAGGAAGGTATACCTTAGGTGGATGGGG
ACAGCCCCTGAGCGAGGGATCAGTCTTTTGGAGTGAGCAGGAATATTCAGGTGCCTGGGAGGAGTGAA
GGCTTGTGCTTCAAGCATGATTGTGTGACCGATGGTGAACATACCTGCCTGCTCAGAAGCTTTGGCTT
CTCTCTGTAGGTGAGAGACAGCCATTAGAAGTCTTTGAACAGGGAAGAAACACGGGTGAAGCAAGGATTT
CATTGAGAAGTCCCTCATGGAAGAAGAGATTACATTGGAAGAGCCTGGCTTAGGGAGGGAGCAGTGAC
AATCAGAGAAAAAGGAGATAGGGGCAAGATACTGGAAGAAAGGAAAACTGTCCAAGCTTTGTCTT
TGTGTGGAAAGCTGGTGTGTTGGGCTGAAAGAGGAAGCAAGAACATGTGCACTGACACGGCTGAGAGT
CTCCAAAACCATTTGCTTTTCCCTTAAACAGTAAATGATCACAAGCAGCTTACAACCTTTGCATATAGCCACT
GGGGCAAAATCCTATTTAAAGCTAATTCATTATCTGAGCCAGTGCATGATAATGCGATGTAAAGGCGTGT
TGGAGGCAGATGATCAGAACTTTTAAAGCAAACTAAATTTCAACATTTATTAGAAGCTGTCTCTATT
TCCAGAAAACGCCTATAAATGTGGCTGTAATGTAGGCTACAGGTATCACACTGAAGTGAAGCAATGTA
CAATACCTGAAAGGTTAGAGAGTTTCAAGGCTGCGGCTTATAAAAACTTCAATTATTCATTTGAAAGATA
TTGTTTGTATCCCCAATTGTTGGTTTCAATGTATATAAAGCAGGATATCATACTTTTGTATCTATGG
ATTTGGAAGGGGATATGTTGGTGGGCTGAGCATATGGAATTATTTAATTAGAGAGATGCCCTTTA
GATTACTATAAAATAACAGAAATCTCTGTTTACTTCTAAAATCTACTCTTTGAAAACACTACTA
AAATGACCAAAAGAGCTGCTCACAAGTGGGAGCTTAATCAATAGTGTGTACACATGGACATAGAG
AGCAGAAATAAACACTGGAGACTCTGAGGGGTGGGAGGGGAGAGGGAGGTGAGGGATGAGAAATTAC

FIGURE 1, page 17 of 93

18/139

TTGATGGGTACAATCTACACTATTCTGGTGATTGATTTCTCTCTGTTTCTCTT CAGAACTGAGAGGAA
ATTTAGTTTCTCAGTCACCACTCCCTCCAACTCCTGCGTGGGTGATACAAGACTTGTGTCTCTTGAG
GCAGAAGGGGTTAGGGGATTTCCCATTTGAACCTGATAGCCTTCATTTCTGTCTTCTCAGGGAAA
CATTTACCCCTCTTTTACTAAATGGAAGAAGTTTGTAACTAGGAGGGTATCTATGGATCTGATTGCTCC
TTACCACCTCTGCTATATATCCATGTAACAAAACAGCGCTTGTGGCCGGATACAGTGGCTCACACCTGTA
ATCCAGCACTTTGGGAGGCCGAGGTGGTCGGATCACCTGAGGTGAGGAGTTCGAGACCACTGTCGCAA
TACGGTGAAACCCCTGTCTCTACTAAAAATACAAAATTAGCTGGGCGTGGTGGAGCATTCCTGTAATCCT
TAGCTACTCGGGAGGCTGAGGCAGGAGAATCGCTTGAACCCGGGAGGCCGAGGTGTCAGTGAGCCGAGAT
CATGCCACTGCACCTCCAGCCTGGGTGACAGAGCAAGACTCCATCGTGGGAAAACAAACAAACAAAAGAAC
AGTGCTGGTACCCCTAAATCTATAAAATTTTCTAAAAATAAATGACAATAAGGAATGAAAAAGGCA
TAGGTACAGCAGATGGGATAGGACACTAAAGCAAGCTGGAGTAATCTGGAATTC TAGAAGGTAGAAGG
CTTAGCAGAGCAGTT CAGGTGGAACCCACGCTGTGGGGCAGGGGCATGAGCAGTGAGCCCATCTAACT
ACGGGACCCAGATAGGCTTGGGATCTAGAAGCAGACAGATGCCTCTAAAGGCTGGGGGTAGGCTGGGACT
GAAAGCAGAATTGGTGTAAGTCTTTAAAGGAGCAATTAGATCCACAAATACCTTCTAGTTTCTAATT
ATTTCTACCCCTTAGGAGAGAGGGGTAAATGACTCCCTGAAAACAGAGAAATGAAGTGAAGGCTATCATGT
TAAATGGGGACAACACCTAGCCCCCTCTCTCAAGACTGACAGGAAAGCTCTACAAACCACGAAGGAG
TTTGGAGGGGTGTTGTCTGAGGAACTAATAAGTCCAAGAGAAAGAACCTTCAGAAACGGACATTTAAAG
GATTAGGTCCCCACCCGATTACCTTAGAGATACACATACAGAAATGTGATTGGACAGTCAAGGATCACCG
TATGATGCTTCTAACTGAACAATAGACACCTAGTCACACCCCAACAATCACACACACATACACAC
ACACACACACTTACTTCACTTCTGCTGGAGGAATTTACAAGATGAAGAATCTTGTATCTCTTTTGGGC
TACTGTTTGTGAAAGGAATGTTGTCATGTGCTCTTGGCTAAGCCAACTCCATCTGAGACAGATTTTGTG
TGAGGTGGGGGAAATTCGCCCAGCGTTAATAGTGTAGTGGTGTCTGGTCCATCTGGTCTGTATTC
CTGCTTTTTTCATTTT CAGATTTAAATCCAGAGTTATTACAGATGGTAACATCTGATGCCAATTTATGGAT
CTTTTTCATAATTCACCTGCTAGGAATCTCAGGTAACTATAAAATATGCTTTTATTTGGTCATTTTAAG
AGTTACGTTTCTGAATTTT CAGGTATTTTATCTGTATTGTCTGAGCAGATTAATTAGGGAACACATTCATT
GACATTTCTATGTATTTTCTTTGTATTTCAAAGTCAGAGTCAAGTATTTAAAAAGATAAGATCTTTTCAAT
TTGTGTGTGATCCACGGAATACTTCTACTGTAGATTTATTAATTTCTCCACCTCTGGCCTCTGATT
AAGGAATGTCAGAGTATTTCTATGACAACCTATTAAACCTATTATTTCCCCCAGGGCGGTTTAGTATAT
CACTAAATATACCTTTTAGTGATATTTGTTGATTGGAGCATAGCTTTTGTGTTTGCCAAACATCATTGATG
TGTTTTGAGGTCTATGTGGTGTGGGGGGCAGGGGGTGGTTGTAATGTAATAGTGTCCCTCTAGTATGT
AATACTTCAAGGACATAGAATTTATTTTTTAAAGTCTTAAATCTTTTGTGTTTCTAGGAAATCTT
GAGTCTATGTTCTTTGATTGAGACTATAGAGTTTCTTGGTAAAGTCTCCAATTATTTGGTTTTCTGAGTA
AATCTTGAATTTGGTGAGGCTCCAGGATTATGTTTGTGTCATCTGTTCTAATTAATAGAGAAAAGC
ATATAAATCTTAGATGCTTAGATCTGGGACTATTGCATCTACTTGGCTTGAGCCAAAGTGCATTAAT
TTTTATCCAGTAATTTGTGGCAACATATTGCTTCCAAACAAATCACATTTGTAAATGCATATTGAGCATT
TTCTACATGAAGGGCATTACCAGGGAGTGAAGAATAATAGGTCGAATTTGTCTCTGGGAGAGAAC
ATCTAGTGGGAGAGATGAGTTGTGAAAAGTTAATAACAAATATTTATAGATGGTCAATATAGGAACCT
GCAAAATATTAAAGATTAAATACATGTGAAAAATTTGTTATTGAATTCAGGCAAAAGTGAACTTAA
ACTGAGTTGCACAGGAAGAACTCATAAAAAGGTGAGCTTGTGTTGGATGAGTGGATTGGGCAGATAAAG
AAAGACAGGAGCAAAAATAAGAGGTGGAAGAACACAGGGGTGTTGATGTATGCAGGGCACGGAATCA
GTTGATGGTGGGGGTACCTTCAACTTAAACCTCTGTACCAAGTTAGGGTGCTTGAGTTGTAAGAAGCC
GAAACCAATCTGGCTCATTTAGGCGGAGAAAGAAATTACAATCCATGACTAGGATATATCCCTCCATCT
ATTTAATCCCTGTTTAACTTTTCTTTATTTTTATAGTTTGTATAGTTTTCTATGCAGAAGACTTGCA
TCTTTCTGTTACATTTGTTTATAGTATTTGACACTTTTATGTTATTATTAAGATTTCTTTTCTTTT
TTGAGACGGAGTCTCACTCTGTCGCCAGGCTGGAGTGCAGTGGCGCAATCTCGGCTCACTGCAAGCTCC
GCCTCCCGGTTTACACACCTTCTCTGCTCAGCTCCCGAGTAGCTGGGACTACAGGCGCCTGCCACCA
CTTCCGGCTAATTTTGTGTGTGTTTTTATAGAGACGGGGTTTACCCTATTAGCCAGGATGGTCTT
GATCTCTGATTTCGTGATCCAACCGCTCGGCTCCCAAAGTGTGGGATTACAGGCGCGAGCCACAGC
GCCCCGTCAAGAGTTTAAAAAAATTTCACTTTTCACTGTTGACACTACATAGAAATACATAGATTTT
TGCATATTGTCCATGTATCTGCCAACTTGCTAATTTAACTTATTAATTAATAATTTATCTATGGAT
TCTTTTGGATTTTCCAAATATACAACTATGCCATATAGTAGTGTGACATTTTATTTCTTCTCTAGCT
CCGTAACCTTTATCTATTTCTTGACCTACTGCATTGACTAGGATCCTTTACTACAATGGGAAGAAAAAG
TGATGGTGGGCATTTCTTCTCACTCCTGATCGCAGGGCAGCATTAACCTTTTACCATTATGAATGATG
TTTGCTCTACAGATTTCTGTAGAACCATTATACAGATTGAGGTAGTTAATCCTAATCTGGCTAACAGCAA
TTAAAAAAATGAAGTAATATAAAATTAAGAAATTAATATGCTGCTAATGATATGTTGTTGAGTAACATA
AATATACCAATTTTCTATATCTACTGAGATGATCATATGAATATTGTTCTTTATTTACTATGGTGAATT
GCATTCATTAATTTCTTTTCTTTTTTTTTTGAGACAGAGTCTTGCTCTGTCAACCAGGCTGGAGTGCA
GTGGTGCAGTCTGAGTTCACTGTAACCTTCACTCTGGGTCCAAGTATTCTCTGCTCAGTCTCCCG
AGTAGCTGGGATTTAGTGTGTGACCATCACGCCCGGCTAATTTTATATTTTATAGATAGAGTGGGGTT
CCCCATGTTGGCCAGGCTGATCTTGAACCTCTGACGTCAAGTGTGCTGCTGCTCGGCCCTCCCAAAGTG
CTGGGATTACAGGTGTGAGCCACTATGCCTGGCTGGATTCAATTTTCAAATGCATTTTAAATTTCT
GAACTAAATCCAATTGATTATAATATACTATCTTTTTTAAAGGAAAAGTAGATGAATCAGACTCAGCA
AAAATAGGAGCCAGAATAAGCAACTGATACGGTTTGTCTATATTTCCACCCAAATCTCATCTGAATTGTA
ATCTCCATAACCCCACTTGTCTAGGGAGAGATCTGGTGGGAGGTGATGGGATCATGGTGGCAGTTTCCC
TCTTGTGTCTCGTGATAGTGAATTCTCATGAGATCTGATAGTTTATAAGGGCTCTTCCCCCTTCGC
TACTCACTCTGTCTCTACCTGCCACCATGTAAGACGTGCTTGGCTACTCCTTTGCCATCTGCCATAAT
TATCTGAGATCTCCCCAGCCATTGGAACCTGTGAGTCAGTTAAACCTCTTTCTTTATAAATACCCAGT
CTCAGGCAGTTCTTATAGCAGCGTGAATAATTAATAACAGCAACCATGGCAGGGGAAGGCCAAGCAC
CTTGACTGAGTATATCCAATGGGAGAGGAGATTTTTTCTCACAGCCAAATCAGGACACTCACAGCTTTG
TGTTTAAAGCTTGGGCTCTGGACTCAGGCTGCCTGGTTGAAGTGCCAGTCTCTCTCTATGTGGCAG
GGGACCTTAGCTCTGAGTATCTTCTCTATAAAGGAGGATGATGTTCTATTTACCCAATAAGATTCTAAG
GATTAATGATACATTAAGTGCACAGGTGAGATCACTCTCAGCCCATAGAAGTAATATAATTCAGCT

FIGURE 1, page 18 of 93

ATTATTATTGTTATTGTTGTAATATGAGAAAGGAAAGGTTCTACTCTGACATCCTGTAATGGAATAATCA
ACTGAACATTGAAAAATGTTTTAAATCTGTCTATCAGAAAGTTTTTCATCAAAAGAAAACACTGAGTAGTC
TAGTGTGTTAGCTTGATGCTCAAAACCTTGAATAATTTTCAAACCTATTATGATATCTGAAATATTCATAATG
ACCTTATACCTTTGAATTTTTTGGCAGCTTTGTGGAGCTATAGCTGACATATAGAAGAACTGCAGATATTTCA
AAATGTACAGTTTTATAAGTTTTGATGTATGTATACAAACCTATAAACCACTACCACATAAGGAA
CATACCTGCCCCCATCCACACATTTGATGCGCCTCCTTTTAAATTTCTCTTTCTACCCTCCACCCTC
ACTGTTTACCAAAAAGAATGCTGTGATGGTGCCCTGGGCACTCCCATCTGTGACATAGAAACCCATAGAAA
AAGACAGCAAAAGCTCTTCTACTCTGGAGTTCTACTTGATTTTAAATGGCATGATTAGTGTGAACCA
CATAAACCACTACTAAATACAGGATTTGATCTAGAAAAGGTGATGCTAAATGTCATGTAGATAAAACC
TAATTTTTTTTTCAGACACCAAAATGAAAAATTATTAGTAGTCCATGACATGAACACTTTTTATTTCAC
AACCATCTGTGCTCTCTTTTGGTGTTCATTTGCAATTGGATGGAATGTTTATGTCCCTTCCAAATTTGTAT
GTTGAAATGCTAATCTCAAGATGATGGTATTAGGAGGAGAGGCTGTGGAGAGGTGATTAGGCCATGAGG
GTGGAACCTCTCAAGAAAAGGATTAGTGCCCTCAGCAAGAGGCTAGGAGAGCTAGCTTGCTCTTCCCA
CATTTAGGGACACAGCAAGAGGGTGCCGTCTGTGAACCTAGAAAAGCAGGCCCTACCAGATACCAAAATTTG
CCAATGCCTTGGCCTTGGACTTCCAGCCTCAGAACCATGAGAAGTAAATTTCTGTTGTTTATAAGCCA
CCTAGTCTATAGTGTGTTTTGTTTTAGCAGGCTGAATGGACTAAGGCATTATTTATGTGAGTTCTATTTC
ACCATGGAGCATATGTGCCCTATGTGTCCTGGCATAGGACAGCACTGAGCAGATCCGACGAGGGAAT
TAATAATGCTTGGACCTATCTTTAAACACCTAGAGTTTAGTAGGAATCACTAGGAAGTAGTAGGTTAA
GGAAGTAGGTGACTTTTGTGTAGCCCTGCCATGTGCTAGAGACTGTGCTAAAGTGATTTACCCACATTA
TCTTATTTGAACCTCATGGCAAGCCTGTGTGGTAGGTCTTATTCCTCTATTTCAGATGGGGAACTGAA
GCTCAGAGACATTAAGTAATTTGCCAAGTTATAGAATATACGAACAAAGAGCTGAAAGTGGCGAAAGGG
CTCTTTCTAGTCAGGAGGAATTAAGAGAGCTTGGGTGCAGTGGCTCACATCTGTAATCCTAGCATTTTGG
GAGGCCAAGGTGGGAGGATCAGTTGAGCCAGGAGTTTGTAGATCAGCCTGGGCAACATAGTGAGACTTCG
TCTGTACAGAAAAAAGAAAAAGAAAAAGAGCTTGGGATCGTGCCCTCCTGTGACTCAGCATACCTT
AGTCTTGGTCTGCCTCCATTTCTGAATTTGCCCTAAAGCTAGTCAATGCTTCTTCTTGGTTTTCTGCTAC
AAGTTTTCTGCCTTCCCCACTGGCCATTTCGGGGTCTCGTTCTGTTATGCAATCAATCCCTAGATT
TCTGAGGTCCCAGAGGGTGGGCTTCTGCTTAGTCCCTGTTTGTCTTCCAGGGCTAGGCATCCTGGTCT
TAGCCCTGGCCTGGGGCTTCTCTCCCTGCTGCCTTCGACCCCCGGGGCTGACCATCTGCTGCTCTATC
CTGCATCTGCTGCCAGTTTTCATCTCCCTGCTCTCGAGCTCTGCTTGGCTTTTACTCTTGAGGGGAACCTC
CTGCCCTCCACTGTGGACTGGTCTGGTCCCTCTCATGCTGCTGCTGCTTCTGACCATCTTCTACTCTGG
TCTGGCCTCCCATTTCAGAGCTCATCTGTCTCCATGTGTGCTGCTTCTCAGAGGGTCTTGAGTCTC
AGCTTTTTCAGGTTGGCTGGTGCCATGGCCAAACCTGTCCCACCTCTCCCATTCGAGTTCCTCACTAG
CTCCTTTTTCAGAGTCTCTTTCTTTTGGGGTCTAGCTTTGGCCTTGCTGCATGAATCATTAAACATAAA
ATATGTGCTTCTCAAAATTAATTTTCCATTTTGTGTTTGTCTTGTGCTAGTCAAGGAGATGGAGAGGACAA
CATCTTGTACTGAATGTCTTGACATCACTAGAACTAGACTGCTTGTGCTTCCGGGCTGCTGAGGTCT
CAAGAATAAAGAGTATCCTCGAAGACATTTCTATCAGTCTTCCCTGGTGAACATTCTCCTAATTTTT
CCTTTTAGCTTTGAGACCACTTTTGCATGATTTTTAATATGCTATTAATTAATAGATATAATTTTCTC
TGCTCAAGCTGCTGTCTGTAGAAGACTTTGCATACAACTATCATAAAAAGACATTTCTTCTGCTCT
CTTTGGAAGGAGCCTGTGTCACTAAGAGTGAGGAGTACACTACTTCTTTTGTGCTTGTCTATCTGCT
CAGGGGATTATTGATTAGCAGATAGAATTGGGTGCAGGCTGGGCGCAGTGGCCATGTCTGTAATCCAGC
ACTTTGGGAGCGCGAGATGGGTGATTACTTGAGGTCAAGGATTTGAGACGATCTGTCCAACATATAGC
GAAACCCCGTGTCTACATAAAATATAAAATAGCTGGGCTGGTGGTGCAGTCTGCTGAGTCCGAGTAC
TTGGGAAGCTGAGGCAGGAGAAATCGCTTGAACCTCCGAGGTGGAGGTTGCAGTGAGTGAATCGCGCA
CTGTACACAGCCTAGGTGACACAGTGAGACTCCATCTCTCAAGAAAAAAGAAATGTGGGGGCA
GATAAGTTTTTTGGGGGTTGCTTTTAAATCTTTTGAAGAACTGGGCTTGGCTGGCTGGGCCTAGAG
CAATGTGATATGGGCAGCTGCTTTGCCATGGATGCCAGGACAGTCAAGAGAGATGGTTAGAAA
TGGTGCCAGGTTCTCGCTGCCTCGTGCAGGTGAGCTCCCAACAAAGCCTTTGTACAGACACATATAAA
CCCTCAGAGAGTTTATGCTAACCCAGTGTCTTGGCCATGGCTTACTCATGATGGAAACTGATCATATTT
TATTTCTGGCCACATGGAATAATAGACATGTAATCACTATGAGATTTGAGTTGAGGCTCTTTGGTTCTTA
ATAACCTTTATAATTTCTTCCCTCATCAGGGAGACAGAATAAGGTGTTTACATTAATCTTCAATTTTGC
AAGAATAAGATCGAGGTTAAATCTACAGTTTGTCTTGATAGCTCAGCAGATTTCTGCATAGTAGAA
AGTGCTGTTTTCCCACTAATCAGAAGAAGAAAGTGCTAGCCATAATGATATGGGTCCACTGTGAAGTAGA
AGACAAGAAACAGAGCAGGACGTGGAATTTGGGAGCAATGAGAAAAGGTGCCATAGAGTTGCTCTTGGCACC
CTGCACCTTAGATCACCTCTTAACTGCCCTGCTTTACTCTGAAAATTTCTGTCTATTTTGGAGAGA
TAAATCTCGAAATGCAAGTTTCTCAAGTTAGAAATGATACTTTTATATAGAGTTTAAAGAAAGCATG
CTTCTTTTCTCTCTATGAGAACATTTTTATTTCAATTATAAAATGGCCACTATAAATAGCCAGTCAAGT
TCATAGGGCATGAGTCTCATCAGCGGATAATTTACATATATATAAAAAAGTATGAGTTATTTAACTAAA
CTAAAAAGCAACCAAGTATCTTGTGTCACATATGATGTATCCTTTTCTGCAAGGTAAAAAGTG
GTTTTCATAACCTTGCCAAATATAATCCAAAGAACTAAGGACTTAGTATCGTTGCTATTTGAAGTTATTC
TGTTTATGAGCAAGCAACACTATTTCTTTGATGAAAACCAAGAAAGGATTTACGTGTCGGTAATAGGGTT
CCTTTATGTTTTGTGTATGTGTGTGTTGTGTGTGTGTGTGTGTGTGTGATTTTATGAGGTTTGTCT
CATTTCTCTATGCTAGTGAGTGTGATTAGTTAGGATTGCTCTTTTCAAGTTGACCTATTGCTCTTTTAAAGG
ATTTTGGATATAGTCCCTTAACCCAGAAATTAACCTCTATGATAAAACCTTTTGGGTTGTCAAGAG
GCTAATAGGGGATATATGGGAGGGAGTTTTTTACCAGCCGTGAGATCTCATCTGACAGCTGAACATAC
TGTAACCATGCCCATGAAGGGTAGTACAAATCATGCTATTGAAATTGAGAGAGATGGCTGCCCTTTTGA
CAGGAAGAGAACTAGAAGTTTTTGACTTTGTGAATCTAACCTCTGCAGCTGCATCCCCAGGCTGCTGT
CCACATACCTGTGCTCCACTCCCTCATGATTTCTCACCACCGTCATCTTTGTTTCTCTTGTTC
TTTATCCTGAAGCTCTCAACCTATGAACCTGTGAAAAGCCAGATAACAGTAAAGATACATATTTTA
TGGAACTATTTATATAGATGGTGTCAATTTCTAAGTACTTTAACCATATTGATTCCTTTAATCTTTGCAA
TCATGCGAGTGAACAGGTGATTCCTATACATCCCATTTTACAGTTGAGGAAACTGAGGCAGTGAAGGGTGA
AATGACTTGTCTGGGACCACATAGTACGTAGTCAGCTAGTATTGGACCCAGACTGTCTAATCAAG
CCCAAGTTATTGGCCACCATACTCTATAGCACTCTTAACCCAGATCAATATACACAGCACCATCAGAT

20/139

GTGAAATTAATCAGTGTGTCATGTCCATTCCCTCTGCTTAATTGTATGTTTCTTGTGATGAGGAACATAAGC
CATCTCCAATGCCTGGGGCCACACATAGCAGATGCCCTATAACTATCATCATTGTGTCATCGTCATTCTTAT
CTTCTCTCTCTCTCATATAATCTACTACATATAAGGCAAAATTTGTGGGTGAGGCACACTTCACATAA
ATTAGATTTAATTCTCACAACAATCTTACGAAATTTGTGTTGTTCCCGAGTTTATAGTTGAAAAGACCTTG
CATTAGGAAGTGGTAAAATGGGAATTTGCGACCCTGCCATTGGTTCCAGAATCCTTCTCTCTAACCAC
TCTATACCATATGCTTAATTAAGAAAAAAGAAACAAATAGGTGAGAAAAACAATGATGTGAAGAATTT
TGCTGCCCCCAGTATTAGGATTTTTTTTCTTCTTCTTGTGCTAGACTCTAGAGGGCCAGATCCTGTGGAGC
TGCTCTCTGAAGGGAAGGGTCAGGCTGTTACCCTGATTTTCTGGAGTCACAGATAAACTTCTGCCCT
CCACCGGATGCCTCTATCTTACACAATTAATTTCTTACAAATTTGGTTGATGACATATTCACCTGGGA
TAATGGGTTGTCCCTCTACTTTGAACTGTGAGAGAGTTCACTCAATTTCCAACCTGCGTATGAAGCTC
TTGAGTCAGATTTTTTTGCTGTAAACACCTCAGCTCACACCAGTGCAGAAATGGAAGTTTTAATGGCTG
TAGGATTGAAGGGTTGGTTGGTGCATGGTGGTATTTTAAAGAAAGGCAAGTTTTATTAAATGAGGAAT
ATTTCTCTGGGTTTTTTGAGTTAGCTATGGGCCATGCAACAGGCTGGCTGCTTGTGAGAAAATGAGA
AGGGTGATCAAGTACAAGAAGATGCAGCCAAAGAAGTGGACACAATCCACGTCAAGTTCCATCTCTTTG
TGGCAGCCATGATTCTGAAGGTCACTGAAGGGTATTTTCCCTGAGCTGTTTTGGAGCCTGTGCCACTG
GCTTCAATGCTGGGTCTTGGCCACCTCAGTTGCTATAAAATATGGTTATGAGTGCTTCCGCTTCCCAGC
ATCTTGCTGCAAAAGCCCCACTTGTGCTTGTGCTGAGCCCCACTTCATTGCTCCTGCCCTCTCTGGGGAGA
GGGACTCACACCTGGGTGACAAGGTTAGGGCTTCTGCTGCACTTTTTGGCATCTTGTGCTGCCCTGTA
TAAGGGCAAAGCTAACCTTTTTTTTTTCTTTTCTTTCATTGAGACAGTCTCGCTCTGTCAACCAGGCTGGAGTG
CAGTGGTGCGATCTAGGCTCACTGCAACCTCTGCCCTCTGGGTTCAAGTGATCTCTGCTCAGCCTCC
CGAGTAGCTGGGATTACAGGCTTAACACCACCATGCCAGGCTAATTTTTGTATTTTAGTAGAGATGGGGT
TCATCATGTTGGCCAGGCTAGTCTGGAACCTCTGACCTCAAGGAATCTGCCCTCGCCTCGCCCTCCAAAGT
GCTGGCATTACTGGCATGAAACACCACCACAACCTCCGACCTTCAAAGATTTAAAAAACGTGAAAACCTG
AAATGAAGACTAGATACTAATGAACATTGGACTCATTATGACTTTGTAAAGTCGTTTTGATTTTATTAA
AATCAAACATTAATAAGCAGACTGTGAATAAATAAATTATATTCTTTGGCCATTTCTTCATTAGACAAG
GATGCTATCTTTTATGGCTGTGTTATTTGGGGATGGCTGATAGCTCATAGAACCAATCTAACATCCACA
GATTTTTTTTCATAGTCTGGACTAGGTTTCTTAGCATAATGCGTTGTTGTGGTCTCATGGTCTGTGATT
CTCTCTTGCCAACCTTGTTCATCAGTCCCTGTTGCTCCTGCAATTTTGAAGCATTTGGAATCCTAGCA
ACAGATTTCTCATTTAAGTAGGATGGTCTGATCACTAGTCTCCCACAGAGAGTTGGTAAAAAGTTTTGT
TCTTCTTATCACCCACAGAACTTCCCTGAAACATTTTTTGTGTTGCTTGTGCTGCAAAACCATAAGCTTAGT
AGAAAAATGCACCTTGCTTGTGAATACACAATCAGGTGTCCAAATGAGATGGTCCCTCCTAGAAAGATAA
TATTTCCGAAGTCTTGCCCTCAGTGGGAGGTACTTGGTTGTTTGTGTTTTTGTGTTTTTTTTCATTCAATAG
CTTTAGGGGTACAAGTGGCTTTTGGTTACATGCATGAATGTATAGTGCCGAAGTCTGGGATTTTAGTTTT
ACCTACCTCAGTCAAGTGTACTCTGTACCCAGGTCCTTGGATTATGAGCTTGTGTTTTGTTGCTTT
TATGTTAAGATATGAATAATATGATATGCTTTGGCTCTGTGTCCCCACTCAAGTCTTATCTCGAATTGTA
ATCCCCATAATCTCCACAGTCAAGGGAGGGACCTGGTGGGAGGTGATTGGATCATGGGGGCAATTTCCC
CCATGCTGTTGTATAATAGTGAGTGAGTTATCATGACGCTGATGTTTTTATAAGTGTGACCATTTCC
ACCTTACACAGCTGTCACTCTCACCTGCCGCTATGAAGACATGCCCTCTCCCTTCTGCCATAATTGTA
AGTTTCTGAGGCCACCCAGCCATGTGGAACCTGTTGAGTCAATTAACCTCTTTCTTTATAAATTACC
CAGTCTCGGGTATTTCTTTATAGCAGTGTGAAAACAGACTAGCATATAATAGAAGGCTCTTTACCTTTTT
AACTTGGGAAGGCCAAATTAATCTGTCTTTCCATTATAAGAATCTTCAGATTAATATTTCTCTCATT
ATTGTCCTCAGATCATATACATTGCTTTTTAACTCTAAGTTACATGTAATAAATAAACAATGAAT
GTATTGTGGATCATAAACTTGAGTTTTTAAAAAGATTTTTCTCTAATTTTAAAAAGTAATAAACAATAA
ATACTTACTGTATTCAGGTAGTGTCTTTTTTTTTTTTTTTTTTTTTTTTGTAGATGGAGTTTCACTCTG
TAGCCCCAAGCTGTAGTGTGGTGGCGTGATCTTGGCTCACTGCAACCTCCACTTCCCGGCCCAAGCAATT
CTCTGCTCAGCCCTCTTGGTAGCTGGGACTACAGGCACAGCCACCAAGCCTGGCTAATTGTTTTGTA
CTTTAGTCTCTACTAACAAGGGTTTCCCATGTTGCCAGGGTGGTCTCGAAGTCTGAGCTCAGGTGAT
CCACCCACCTTGGCCTCTTAAAGTGTGTTATTACAGGCGTGAGCCACCGCGCTGGCCAGGTAGTGT
CTAAGGGGCATGCTTCCATTAAATTCATGGAATTCACAATAACCTTTGTTGCAAGTAATATTTATCCC
CACTTTACAGATAGGAAGAGGTACAGTGACTGGGGCAGAGAGAGGCTCTGTGACTTTGTGCAAGCAGCA
ATGTAGGCAATTTGAATTTTCGGCAGCTGCTGCTCCTGAGTCCATTCTCCTAAAAATTTGTGCTGATTTAATG
CAGAGAATTTCAAAAACATGAGATAAAAAATAAGAGAAGAATAGCATCAATTTCCCATCATTCAAAGGT
ATCTGTTAAAGGAAACATTTAAACTTAGCTATATATACTTTCTGAATTTGTATGTACATATAAACTTA
TAAAAATGAAATGCTAATGTTTTTACACGTACTGTTTGGTAGCCTCCCTTTGGTATGTTCCCGAGCC
AAAAATTATTATCTTCCCATGATTTTTTTTTCAGCTACATAATGTTCTATTTTATGGAAGTACATCATTT
CCATAATTGAATTTCTTATTAAGACATATTATTTGCAAACTGCAACAAATGTGCATGTTATTTTTAGAC
GTATGTTTGGTTATTTCTTTACGATAGAGTCTTAGAATCACCGGCTGAGGCAAGGGAGATGCACATTTGA
AGCCTCTTTATTCATCTTTGCCAATTGTCTCAAGAAACATTTGTTCAAGTCCCATTAATGCAAGCAATGA
ACAAAAGTTTTTATTTTTCTGGATACCTGAGTGCCTCTGGCTTATTTTTCTTCTATTCTGTTCTTTAAT
AGACAAAACAAAAGAAAAGTTTCTCATATCAATGTGCATTTTTTTGCGATTGTGCAAAAAGTTCAAAAAT
TAACAAAATTTATCTATTCCTTGAGTAATGTATGTGGTCAAGATGTCAAAGAAACAAAGTATTGTGCA
GTGGAATTAAGGGAAGGGTTGCAAAATTAACATCTGTTAATTAGCTTTGGATATTTCTCTTTTGCAA
ATACTTGGCAGTGTCTTTGAGCAGTCTTAGAATTTGGTTTTTAATGTTTTGTTATTGATGATGATTTGT
AAGTCTTTGCTGTGAATAAGATGACCGACATTTGGTATTAATGATGTAATTTTATTTCACATTTCA
TGTGTTCTTTTCAATTTTGTCTGGTGGTAGGCTTATTTTGTGTTGTTTGTGTTTTGTTTGGTGGC
TATGGAAGTCTTTTGGGCAATCAAATCTATCAATCATTTTGATTGATTGTTGTAATGATTTTCTGGAT
TTTCTGGATGATCAGAGGCTAGTGTGCTCTTTGTTTACTTAGATTCTTTTGACAAGGGCTTTGGCTA
TTGTGAATAGTGTAGTATGAACATGGATGCAAAATCTCTCGAGACCTGCTTTCAATTATTTGG

FIGURE 1, page 20 of 93

21/139

GTATATGTCCAGAAGTGAATTGTTGGATCATATGGTAGTTCTATTTTTAAATTTCTCAGAACTGCCAT
ACTCTTTCTCATAACAGCTGCACCATTTCCACATCCCACCAACAGTGCACAAGGATTCCAATTTCTCCAC
ACCCCTACCAATGCTCGCTATTTTTTTGGGTGTTATTTTTGACAGTAGCCCATCCTAATAGGCATGAGGAT
CAATTGTTCTGAACATTAACATTTCTGTGAGGTTTTTAAAAAGTTTCCAAAATGACATCCCTCCAGCTCC
ACATATTCTATAAGAGCAATATCATAAATTAGAAGCTGTCTATGAAAACCTTGTAGTTGGAAGATGTTTGT
TTTCTGTGGGTAGTTACATTTACATATGCCTCATTGTGAAATAATTTCTAATGTGCATGAGCTGGAA
TTCAATGCCTGTAGTCAAAGTAGGCTTAATTTGAATTGGAGTTGATTAAAATGAAATGACTAATTAGCT
TTATATTGACTTGGGAGTTGCCCTAAGGAAGGCATTGGGACAATGTTGATACTCTGATTACCTCTATT
CCTACTCTGTAGCTTAAATATTAGTATCTGCATTGACACCCAGCAAGAATTTCTAGTATCTGAAGGC
AGCAGGATACTTGCAGCCATTTTCAAACCATGGAATATGGATGATTGGTAGAGACTTCTCTATCTTGAGT
CCCTTCTAATATTTTCATGCTTATCTTATTCATAAGAGGGGCTTCACTAAGTAGGACTGTCTTGTCTTG
ACCCTAGGGGATCAAGGTTAAGTTTCTTAGTCTTGGTAATTGTCAGATTTCTAGTCTTTAAATAGGGA
TAATGTCTGGAGTACCTATTTCTCAGAGTTGCAAGGACCAACAGAGCTAAGGCATGAAAAGCATTAGCAA
GGTCCCTGGCAAGTAAGGGCTAAATAAATCATGGTGTCTTCTGATGTTATGCTTTGTAACCATTTGTAATA
TCTCAGTCAATCAGATTTATATCAGGGTACAGGTTCTTTCTGGGGAATTTTCTAGCACCAGGTATTTT
CTGTTTATCTTCTATGTGGATGGCTTTTCTTATTTCTTCTCATTGACACCAAGGATTTCCAAGTCCCAT
TCTGATTGTGTAGCTTAAATATTAGTATCTGCATTGACACCCAGCAAGAATTTCTAGTATCTGAAGGC
TCTGTGTGTAAACAACTCAAGGATTGATTTTCTACTAAGCCTTTCTCCTTGACTGTCAAATGACAAGC
AAGGTATGCAGATGATAACCCGAAACCCCTTTGATCCCATTTCCAAAATATGGCCATGCCATAGATGAA
GGCAAATGTTTTATTTTCATCTTGTGGCCCCATTGTGTATGCTCTAAGTTTCAATTTGGACTTCTGTCTT
TACTGATAGCAATTTCTATTTCTTTTTCAGACAGAGCCCTTTCTTACCTTTTAGTTGCATTTCTTAG
CATTCTGGCCGAGTCTTCTACTACATGGTCTTATTTGTCATCTCTTCCCTTTCTTCTCTCTCCATCC
CTTTTCTCCATTATTCATCCAGCAATATTTATGAGAACCAACCATGTGAGGGGCAGCAGACTGGACATT
GTCTTGGCTTCTCTGTCACTGCAGATTTAATGGATCACTTTAGACTTATGCCTGTATTTATGCCAGGGT
TCCCTATGTATATTGAACAAATATCTCTGGGGATCTTTCCATTTTCTGCCACTGATTTTTCTTTCT
TTTTTTTTTTTTGAGATAGAGTCTTACTAGCTCTGTCAACCCAGCCTGGAGTGCAGTGGTGCACCTCTG
CTCACTGCAACCTATGCTTCTGGGTCAAGTATCTTTTGCCTCAGCCTCCTGAGTAGCTGGGATTAC
AGGAGCGCACCATGCTGGCTAATTTTTTTTTTTTTTTTTTTTTTTGTTATTTTAGTATATACAGG
TTTTTCTCATGTTGGCCAGGCTGGTCTCAAACTCCTGACCTCAAGTATCTACCTGCCCTCGGCCCTCCCAA
AGTGCTGGGATTACAGCGGTGAGCCACCACTGGCCATTCTCTGCTCTTCTGATTGGGCTGTGTATC
TGAGCTGTGCTCTGGGCCACTGTGCCATCCACAGCTGACAAAATGGCTCTCACCTCCAGGAACTCTTA
CCTCAGCATTTTTCTCTGTCTTGTAGCTTTTCTTTTGTCTCTGGGAATAGCTCTTCTTCTTCTTGA
GCTTCTTTAGTTATTTTTTGATCAATTTTTTTTACACAGTTTTTTGTAACGGAGCAAAATATTTTCAGAA
CTTGTCTTCCGCAATGTGTGTCTGTCTCATCTATCTGCTGTGTCTATGTTAACCGTTCTTTGAATCTG
ATGCCCAATATTTCTATTTGATTCTGTTGATTCTGAAAATTTCTTTTAGTCATTGGTTAGCATTCTTAC
CTCTTCTCCTTAAACCCCTAGGATTTTCTTTAAAAAGTGTGGGACTGATGTTCTGTTCTTCAAGTTGGCG
AACATGGCTCAAAGACCACTAGTGTAAAGCAGCAGCAGCTTTTCTATATTCTGCTGTGTGGGCACTT
GTGATGCTCAGCATGTGGCTGCCATCAGCAGAGATGTGGATCTGCTGGTGGTGGCTGTGCTGCCCTCTGGCC
AGCCAGCTTCTTTTATAGGGAAGAAATGCTTCCGCTTCTTACTGGGGTGTGAGAGCGGGCCGTCAGTC
ACTGCTGTCTCCTAGCACTCATAGCAATGTCCATTTTCTATCTTGTGCTGATGATAATCTTTCTGG
TATCATAACTGTCTTCTCTCCCTTCCCTGTCTCTCTTCTCTCTTCTTCTTCTCTCTCTCTCTCTCTCT
CCTCAGTATGATTAAGGCTTAGCTTAAATGTGTGCTGCTATATAAGGCTCATATTTTAAAAATATAAT
TCATTCACTCTCTCTATGCCTAAGCTTATTTCTTGTATGGCACTTTTCAATTCATAGTATAGCTCT
CTACCGAGGAGCGCATACGGGATAAGGGCAGAGTATGAGTATTTTTGAGCCCAAAAATAATAGTCATT
TTTATTGGTATAGCTTCAAGCATAGTTTACATGATTTATGTTTAGGAAATTTCAAGTGCAGAAAA
ATTGCCAGCAGTTAGAGATGATTGGGTTATCAATATGCTCCCTGTTTTTGGTGTATTTTTCCAGCTT
TATTGAGGTATAACTTACAAATAACATTGATATGTTAAGATGTACAACCTGATTTTTTCAAAATTAAT
TATTTTTTTGAAGTAAATTTTATGTGTATCTTAAAGGTGTACAACATGACGTGATGAGATATATAGA
TAATAAATGATTACTACAGTGAAGCAAACTAACGTATCCATCATCTACGTTGTATCCAACACTAAAA
TCTACGCATGGAGCAAAATGCGGAATACAGTACAATATGATTAACATATAGTCTCATGTTGTAGATTAA
ATCTCTAGACTTGTTCATCTATATCTGTCTTATAGCCTTTGATCTACATCTTCTCATTTTCTTCCC
TTCCCCAACCTCCCCATAACCACTGTGTATGTTCTATTTCCGTATATTTGACTTAATAAAAGATTCC
ATATATAATGAGATGATGCAATTTTTTCTGAGCTTTGTTTATTTCACTTAGCACAATAACCTCCACC
AGGCTCATCCATGTTGGCAAAATGGCAAGATCTCATTCTGTTTTAAGGCTGAATAATATTCATTGTGTC
CATTTGTCTCATGATTTGTCACTTAGGTTGTTTCCATATCTTGGCTGCTGTGAATAGTGTGCAATGAACA
CGGGGGTGCAGATATCTTACGAGGTGGTGATTTTCTTCTTGGATATATATTCAGAAGAGGGTTTTCT
GGATCACAGAGTAAATCTATTCTTAATTTTTTGAAGAAATTTCACTGTTTTCCGTAATGGCTGCAGCA
ATCTACACTGCCACCAACAGGGTACAGGGTCCCTTTTCTCCACACGCTCCCAACACTTGCTATTTCTT
GCTTTTTTGGTAAATAGAAGGGCAGGGCATCAATAATATTGTTTCCCTTACATGTGTGTAACAAACAGC
AGAGCAGTTACCAGCGCTAACTCTGGAACCTGGCTGTCTCATGCTCATCTTGTCCCTGCCAGTTCTTAA
CTGCGGAAACTTGGGCAAGTTGCTTAACCTCTCTGTGCTTCTTGTACTTGGAGCTGATAAAATAA
TGCTTAGAACAGTTACTGCCATATAAAAGTGTCTAATAGTGTGCTATTTATGTTGTAATTCAGCTTA
ATAGAACTCATCAGGATCAGGATCACCAGCAATTTATGAGTGACAGTGTGTGTTTATTCATTGATCGTCATT
ACACTTAGAATAGGGTCCGGGATATAGCAGGCATTCAATCAATATTTTTGAGGGAATGAATTAATGAATG
GGCTAGATGTTATATGTACAAAGAAATATGTCTAATTTCTTTCTTCCAGGCTCACAGATGGTTGAGAAT
ACAAGATGGAGATAAGACGAAAATGAATGGTGTCTAATATGAAGCCCTTCAAGGCTGCCCTTTTCAGAA
TCATTTAGGAGGCTTATTAATAATGTCAGATTTGCTAGCCAACTCTCCTGATCTCAGTTCCATAGATCT
GGACGTGGGTCCAAAACCTTACAGTGCCAAAGAGCTCCCGAGGGCTTCCGGTGAATTTCCCAAGACAG
CCAGGACTGGGATCGCAGGCCAGGCAATATGATACAGGAGATGAGAGGAGGAGAGCTCTGGGGGCTG
ACACTGTTGGGAAGGCTTGGTGAAGGGGAGGTACCTGCAAGGGCATGTAGGGCTTGGGCATGGGGTGA
CTTGATCGTGGGGCTTAGACTGCAGTAGACATTCTGGTCACATTTGCCCGCCCATGAGTTCCTTCCG
TCTCTGATGTCCCCAGCAATTTCTAGTGCAAGTACACAAGAGCCATTGTTGGAAAGTACCTAAATC

FIGURE 1, page 21 of 93

22/139

ACTCTATTTACTGAGTGCTTTACTTGCACCTATAAATCTAAAACAAATTTTCAAGCAAATAAACAAAGTGT
GTGGATATGGAGCAGAAATACCACCTCATGGCATCCTGAACCTGGCCCTCTGACTCAGTAATTAGTATCCT
AAAACCTGAGTTCAAGCATCACATTTTATTTTCAGGTTTACATACTTCATAGAACCTGGTCTCTGATGTT
ACAGAGATCACAGTAACAGTTTACCTTATCTCCAGAATTTCTAACCCTCAATGGTGGCATCTCTCATTA
GAACAGGTAGTCACCAAAATAGTTCCACACAAAGACTCTCCCAATGTGTCATTTATTTAAACAAACAAACA
GATTTGATATACAATTAATATACCACAAATCACCCTATCTAAATGTACAGTCTGGTAGTTTTTAACATA
TTCAGAATCTGCAGCTTTCCACCAATTAATCGTAGAGTATTTTCATCACCCAGAGCCACCCCTCCC
TACCTTTAGTCACCTCCCATTTCCCGGCCCTGATAATCACTCATCTGCTTTCTGTCTCTGTGGAGTAC
TATTCTGGAAATTTTCATATAAATGGAATGATACAACATGTGGCCTTTTGTGACTGACTTCTTTTACTTAG
CATACTGTTTTCGAGGTTTCATCTATATTGCAGCATGTGTGAGCACCTCATTCTTTTTGTGCTGAACACT
ATTTCTACTATATAAATATACTTCATTTTCTTTATCCACTCATTAGCTTGTACACAACCTGGATTTCCACTT
TTTGGCTATGTGCAAAAGTTTCTGTATGCATGCATGTTCTCATTCTCTTGGGTACCCACTTAGGACTGGA
ATTTCTGGGACATGTCTCACTGTATTTATCTAACCTTTTGGAGAAATCTTCAAAATGGTTCCCAAGCAG
CTGCACTATTTTATATGCCCTACCAGCAATGCATGAGGGTCAATTTCTCCACATCCTCACCAGACATTTGT
TATTGTCTTTGATTATAGCCATCCAGTGTGTGTAAGTAGTATCTGTTATAGTTTGTATTGTCATTTTCC
CCTAATGATAAATGACATAAAGCATCTTTTCAGGCATATTGGCCATTTGCATATCTTCCCTTGAGAAATG
TATGTTCAATTTTCCATTTTAAATTTTATGATTTTAAATTTTATGTTGAGTTGTAAGGATTCGTT
ATATATTTCTGGATAGTAGACCCCTTATCAAAATATATGATTTGTAAATATTTTCTCCCATTTTGTGAATCTT
TTCACTTTCTTGATAGTGTCTTGGATGCACAAAGTTTTTAGTTGTGTTGAAAAACAGTTTGTATATCT
TTTCCCTTTGGTTATTTGTGCTTTATGTGCATATCTAAGAACTGTTTCTAATCCTGGGTGAGGAGACTTA
CAACTCTGTTTTTCTTAAGAGTTTATAGTTTTCAGCTCTTATATTTAGGTCTGATTCAATTTAGAATTAA
TGACTTGTATATGGTGTGAGGTAGAGGTTCAAATCTATTCTTCTGATGTGGCTATCCAGTTGTCCGAGC
ACTAAATGTTTAGTCCATTTTCATCCTTCCATTTTGTCTTGTCCAGGCTGTGAAGTAGCCTCCTCACAG
CTCTCCCTGCTCTTAGCTCTTCTCCACCAGAGTCCATCTCCACCATACTACCAGTTATTTCATCTTATAC
ACAGATATGATTATGTCTTTCTTAAATAAAAACTTTATCTTTCTCTTAGTTTCTATAAAATAGTTCA
AATATTTCAACAAATTTCCAGGCTCTATAGCATGAGCTCAACCCACCTCCTAATTTTACTGTGTTCC
TTCTCCCACTTGTACCCCATCCAGCCATCCTTGACTTCTTAGCTGGTCTCTTTCTGGCCTGAGTGAG
ACATTTGGCCTGGATATATATGCATGGTATGGCTTTGGTTGCTTACTGTGGCATTGGTGTCTATGGGATA
GCCATTGACTTTAATTAATGGGGTGTATCAGCACATTTATCCTATTGAAATGACTAGAGGAACCCATAA
GAAACCATTTTTCAGGACTAGTAATCTATTTTAGCATCATTTGGAAGACAACAACTTTCAATTTTATGG
GTAGACTAACATTCACAAATATGACATATATCATATAATCATAATCATTAAAGTTATATTTTAAATAATC
AACCATCCACCATCCCAACTCTAAGACTTTGTTGGTAAGTTTGTATGTACAGGTTTCATATTTTTCAC
ATTCTGACACCTACATTCAAGGCCCTCAAACCTTTACCAGAGACTTTTATCATTGAGGTAACCTAGAACT
CATTAATTTAAATAATATATATTTTAAATTTATGGTAAACATAAAATATACATTTTACCATTGTGAT
TTTTTAAAGCAGTTTACTAGTGTTAAGTATATTTCAACAGATCTCCAGAGCTTTTCTCTTGTAAACTGA
AACTGTAACCCATTTACCAACAACCTCCTTCCCATTTCTTCTCTCCCAAGGCCCTGGCAACCCACCTTA
TTCTTTCTGTTTCTGTGAATTTTACTACTTTAGATACCTCATATAAATGGAGTCTATATGGTATTTAGCAC
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TCCATTTTGTCTCTATATCACATTTTTTTGTTTATCCATTGCTCTGTTGGTAGACATTTGTGTTGCTTCC
ACTTCTTGGCTGTTGTAATAATGCTGCTGTGAACACAGGTGTGCAAACTCTTTTGAGGACTCTGCTTTC
AGTTCTTTGGGATATATACACAGAAGTGTATATAGGATTAGGATTGCGAGATCAGATGATAATTATTTGTT
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TATGATATGATTACATGTGATATGGTAGTTGAGACTGAAATGCTATTTGTAATACAAAGATTATCTTAA
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ATTATGAGAGAAAACTACTATGTCACAACCTTTTGTATAACGAACCTGGGATTTAGGTATGGAGTGGGT
AGAATAGTGGTCAAGAGCAGGGATTTCTGGAGTCAAGTGTGTCACCAATCCTGGCTCTGGCCATTGCCA
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GGATTGTGGTGGCATTACATGAATTAATATACGCAACATGCCGGAATGACATCTGGCAGGGAGGAAAGC
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CATCCACATATCAATATTTGTCTCTGCAAAAAATATACAGTATGTCTCTTTTAACTAATGATTTTAA
ATGTGGACTAATCAATGATCTAAATCCCCCTTCTTTTAGTCAATTAGTAGTTTCAAAATGAAGATGT
GATGGATAGAACATTTTCTTACCAGAAAGCTCTTAGATTGTAATGCTGAGGGAACACTGGGAGATTTCAG
TGAGTGCAGCACAAATACAATCTAGGTGACTGGAATAGTTTCTAATGAATGAATCACTGAATAAGCAGAT
GGGTTGTGGAAGGCAAAACCATGAGTAAATTTTTCTTTTACTACAGAAATATTTCTGAAAGGTAAATACC
CAGGTTTTATGATGATAGACCTTCTTAACTCATGCTATTTTCTTCTGGGTTTTGTTGTCAACACAAT
CTCATCTGCTCTTTGCAACCATTTACCTCTCAGAAATGGGTATGAAGATCAGGTGCAACCATGTATGTGATA
ATGCTTCTAAAAGCTATTTTTTTTCCAGTTTTTATGAAATATATTTTGCATAAAAAATATAAAATCCACCC
ATTTAAAGTACAAAGCTCAGTGGTTTTTCACTACATTCACAGAGTTGTGCGATCATTGCCACAATTAATTC
CTTTCTGTCTCCATGGAATCTAATTTTGAACATTTTATATAAATAGAACAATACATATGCAGTCTTTTG
TGCTGGCTTATTTTCACTTAGTATAGTGTCTTCAAGGGTCAATTTATATTTGAGCATGTATCAGTACTTCA
TTCTTTTTTATTGCCAAATAAGACTTCATTGTATGGATATGTACTACATTTTATTTTCTCATTCATGAGTT
GATGAACATTTGGGTTTTCCACTTTTGGCTATTACAAATAAAATGCTATGAACGTTTGTGTGTGAGTTTT
TGTGTGGACACATCTTAAATCTCTTGTAGTATATGCCAATAGAGAAATTTCTGAGTCATATGGTAAC
CCTATATTTAGCACTTCCAGGAACCTGCCAATGGCTGTACGATTTTACATTTCAACCCAGCAATGTGTGAG
GGCTCCAATTTCCCTACCTGTCTGTACATTTGCTATTATCTGTTTTGTCATAATGGGTATGAAGTGGT
AAAACCTACTGAAAAAGTGACATATTCATGGAGTAAAAGTAAATTTGAACATGCAGAAAGTATTCTTCA
GGCCACAGACAGCCCCAGAAATACAGTTTTTTTTCTAGAGTCTTGAAGTTGTCTATGCACATATGAC
GTATCCCTAGATATGTATTTGCAAGAACACATGTAGGAGTATACATTTTGTATCATTCTTATCACTTA
ATAATATACCTAAGAGCAATTGCTATAGAACAGGTTGACCTGCCCTCATTCTTTTACTCTTAGCAGAGTA

23/139

TTTTTGTGACGATGTACCTTCGTTCTGTTTTAACAGCTTTTCTAATGAAGGGCATTGTTGGTTGGTTTTGC
TCTTATAAGTAATGCCATGCCATCCACAAGACATACAATTGTTCTTGAGTACATTTGTGAAGATATTCA
CAGGAAAAAACAAGTTATACTGCTATATACCACCATCAACAGGGGATGAGAGTGCCTATTAGCCACAGT
CTTTCCAGCTTAACACTGTGTGTTATCAGCCTTTCCCATCTTGGCCAATGTGGTAGGTAAGGTTAGTTTCA
AGTAAAAGTTGATTGACCTATAAGGGGCAATCAAGTTTATGTTTAAAGCTTGAAGTTCAACATTGAA
GTTGAACTCCAGATAATATGGTTAAAGCTTTCAAATTTCTGAGAAATATGCAGGCATAGAGATTGTGTCT
AAATTTGCCTTAATACATAGTATATCCATTTGCTAATTGAAGAAGGTGATTGGTTCAATTTATTTATTCAA
CTGGCATTATTACGACATTATCGTATGCTAGGTGAACCTTAAAGTCTAGAGAGAAGGATGAATAAGAAA
CACACATTGCTTACAGTAATATATAGTCTAATAAGGGGGACATATATATAAATCAATAAGCATAATG
GACATGAAATAGAGGCAAGTATTATACAATAAGCTGTGTATATTAGGCCATAGGCTAAGCTACTGTGAAA
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AGGTTGAAAAGTGGACATGAGAGTAAGGAGAGTAAGCCATTTTAAAAATAAAATTTTATTTAACTTCGA
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AAAATCCTCTCTTAGTTAGTTTGAATATACGATGCATTATTGTTAGCCACAGTCACCTGCTGTGCA
ATGGAACACCAGAAGTATTCCTCTCACCTAAGTCACTTGTACCAAGTTGATCAACCTCTCCCATAG
CCATTTCTCTTAAAGCAAGAAACATGGAAATGTACACATTACTTCTGAAAATACACTGGCAAGCCACTT
CTAGTTGCAAGGTAGACTTGGAAATGAAGTCTAAGTGGGTGACCTGTGCTCCACATTATTCTGGAGG
AAGGGGATCACGGAGCTAGGTTCCCGAGTCTGGGAGGCTGGTAGAGAGGCAGCTCGCTGTGCTACTCTGA
TATTTTATAGCTCCGTGGGGGAAAAAGAACTGCTAGACAGAGCTCTGTCAACACAGATCTGCAATCTCAT
TCAGAAACAAGTTACAGAGACCTCAAGTGATTAAATAACAAGATTATTCTATAGAACATCTTATGGTGAC
ATAATCAATATGATTTCAACACTCAGCTAATAAATGCTATGAAATACAAATTTATGTAAGGTGTTAAATGA
CATGTCAAGTTTTTAAATACAAAAGGAATGAGGGAGGAGACATGAATATAGATGGGTGTTATCAGAGAAT
GACACTTAGATACATTTTATATTGTGTATGTAAGTAACTAATACCTACTTTTTGGGATATTTCTTCATGGTT
TAGTTTTTAAATGTAGATTCAAGAGTTTTATATATTTCAAACTCTTCATGAAAAAATTCAGCTCTGGTTAT
GTACATCCACATTTTACAGGAATGAATTTTCTTTTGTACACTTGTGAGTATATTTTTCTCATGGCAA
ACGTTTTCCAGAAAGCAAAAGTTATTTGTGTACTGTCCCTGATAATCGATGCTGTGTAATAAATCGTTT
TCAGCAATGGCAGTTTGGACACTGATGGACAGTTGGTGACTGGTAATTTGTACAGTATGTTTAGTGGGAC
GCGGGCAAGGGGAAAAAGTGGCATTTGGTTCTCAGTCCAGATTGGGTCAATGTTCTCATAATACTG
GTGAGCAAGGACCTAATCTTTAGGAATTTTAAAGGTTTCTTTAGTGAAGAACAATTTCCAGGTGTC
TAATGAAAAATTATAAATGACCAGGTATAATTTTGCCAAGCTTTCCAACATAGTTTTCTTTAGGGTGAG
AAACAATCCTTTGATTTTCTTGAAGTAGAAGTCTCTTCTCGAATGCTAACAGTAAACAAGACCTTTTCA
GACAGATTTTGTATTTGCCATCAAATGTGCAATTTTGAAGTACGGGACTTGAGAATCAGGTAAACTT
CCTTCTGAAAACAGGCTTAATTTTATGACTGTGATTAGAAAGTTGAAAAAATCAGCTTCTCAGAAA
TGAAAACAAAAGTCAGAGTTCAAACCTGTTTATCTGTTTCTGTAGCTTTTGTTCAGAAAGGCAAGGAT
TATTTGAGGAGAACCTGAAAAATTAACCTCAAATGGAGGAAAAAATGGCGTTTATGCAAAATGCAGCAAA
AGCAGACAGCCTTGGAGAACTGAAGCTTAAATAGCGTAAGAGTCTGAGTACTAGTCTTCAGATACTTAAA
ACAGCAATTTGATAGACAAGTTAGATATTTAAGGAAACATTAATCAGCTTGGCATCAGCATTAGTGGCTT
CAATTTTGGCTGAGCCTGACTTTGCCATATGATCCTAGACAAATTTGCCATAAATGGGTGATATTAAC
TCTTTAGGGAAGGCTCTGTACTGGGATTTTTTGGAGCCTATGATTTATGGGGTCAAGCTATAAAACAG
GAGGAACACATGCTCATTTGTATAATTTTACATATATTTGGTCCATAATTTGTACAGCTAGGCAATTC
TTTATTATCTGTTTGAAGTAAAGTTGATTATTTAATGTTACTACTCTGGTTTTTCTCTCTCAC
ATGTTCCAGTGACTCCTTTCTGATAACCAACTTATCATATAGAACGCATGTAATGCTGAGAAATGAA
CACAGGGTCTTGAAAAATGAATGACAGCAATGGTCTCCGATGGCAGTTTGTGCACTTTGAATGGTTT
ATGAAATCACTGTTGATAAAGTGAACACCTTCTACTGAAGGGAGAAATTTAGGGGGGAAAAATCCCAA
TAGAAGGAGTTAATATCCAACTGGAGACTTACCTGGTAAGGTTCACTTAACTGGTAAAAATGTGATCCA
ATTTAAACAAAGTATTTTGTATTTCTGAGAACAAACATCCTACATAAACACAAAAAATGATATGAGACA
TAGATATAACTTGGTTCAAAATATTTTCCAAACTATAATGTACCAGCCAGTTGGTACAGCACACCAGGA
GAGAAGATCATTTAATGTGCTAATAGCAGCATTTTATTTGAAACCCACTCTGCATGGTTACAGGGCT
CAAAACACATATTTCAACAGGAAGATACATTACCGAAATATTTAATGAGAATATTTAATATGCATTGA
GAGGTCCGATTTCTTGCAGAGACCTTGTAGGTAGCTCTTTGAGATTCTGTCTATGCATTAAAGTG
AAGGAGTTGGTTGGGTATTTAGTTGGCAAATTTGCAGACATGTAGCTTTGGTAGTGGAGAGGTAATAG
TACCATGCCCTGCGTGCTGGCGAGGAAGCCCCACAGCAACAGTGGCTTTAGCAGCTACCAGATTGCTA
AAGCAGCCATGTCCAATTAGCAGTAAGTGCCATGCACCTGCAGTTACTAGGAATGAACCTCTTTTGAG
GCTGAATCTTAATGTAGCCTTTTAAAAAATAGCAAAATCTTACTCATCTGAGATAATAAAGAAA
ATTAGCAATGGCAAAATGGACGCACTCTGAAATGTATTCTTAATAATGATTTAGAATATGGGGTAAATGT
AGAGGCAATGACACATTTAAACTGCATTATTTTAAATAGTGTATTCAGTTTACTTCTAATTTTGAA
TTCAATTTTATATCTATACTGCAACTGCTTTTTTTTTTTTTTTTGTAGAAATCTATAATATTGCTGCAGG
CTCCCATGTATGTTTTCCATAATTTTCTGCAAGTGTTTTACCAGAAATAAAAAATACAGTTCAAA
ATTGCAAACTGTAGAAAAATATGCTCTTTGACTTCTTTCTATGTGTCAAATTCACCACAATGGAAAG
GACTACACTATAGAATTAACAGTTATTTTCAACAGATAGTACTTATTTAACATGTGTTGAGCATTAA
AAATATTTAATATCTTTTCTAAAAATGCTTACATTCAAGAACTATTTATGAGGGTTCTGAGCAGTATGA
TGTTTCTTTCTGATTACTGCTTTTCTCTTTTAGAGGATATTGTAGGAGAAAAACATTTGTTAAGCA
ATTTCCAGAACTACTAGGTTCTAATAAGCAATAGGCTAATAATTCATTTTCTGCACTGGAGTGTG
ACTTTTCTTTTATTCTCAGTCATAATTTTTTAAAGAGCCAAGAACCAATCATCAATCTAATGTTG
AACATGTAGTAACCTTTTATTTGCTGATCATACTCTGAGATTCACCATACGAATAAATCATAAGTATTAA
AATTTGAGCTTTTAAACATACCCACTACACTGCTAGCCTGGTAACACAGTCACCAACTACACAGCTTCTT
CAACTGTTGACGTGCTTTAAAGCTAGGATTATGGTATCCTGCCAAAAAGATCCTACAACTGTCACTATT
TTGGTTTGTCTGCCAGCCATTGAGAAGTAGACAATTTCTATATACACAAACAGTTTGGAAAAATTTATG
CAATAGGAAGTTATTTCTCAAAATGGGTATTTGATTGCATTTTTTTTTTTTTTTTGTAGACAAAGGCTG
ACTCTGCCCCAGGCTGGAGTGCAGTGGCGTGATCTTGGCTCACTGCAACCTCCACCTCCGTGGTTCAAGC
GATTTCTCTGCTCAATCTCTGAGTAGCTGGGAATACAGGTGCATGCCACCACTCCTGGCTAATTTTTG

FIGURE 1, page 23 of 93

[illegible]

TTGGGGCGGATCACCTTGAGGTGAGGAGTTCGAGACCAGCCTGGCCAAACATGGTGAACCCGATCTCTACTA
 AAACATCAAAAAATTAGGCAGGCCCTGGTGGTGGGTGCCTGTAATCCAGCTFACTCAGGAGGCTGAGGCGAGG
 AGAATTGCTTGAACAGGCAGAGGTTGCAGTGAGCCAATATCATGCCACTGCATCCAGCCTGGGCGAACA
 GAGTGAGACTCTGCTCAAAATTAATAAAAAAAGAAAGAAAGGAGGAAAGCTGGGGGTGAGGCAG
 GCAGTGACTCACCCAGGGTCTCACACTGATTGTCTGGCAGAGTTAAGCATGAAAAGGTGCCTCTCTAGT
 CTCTTTCCAGTGTTCTTTGTCATCACAATGAGTTAAATATAAAATTAAGTAGCAACTGGGAGTAATAACAA
 TAAACTCTCTCAAAATCTACTACATGGTCTAGAAAACCAACATAAGGCCGAGCGAGTGGCTCAGCGCTG
 TAATCCAGCACTTTGGGAGGCCAAGGCAGCGATCAGAGGTCAGAGATCAAGACAATCCTGGCCAA
 CATGGTGACACTCTGTCTCTACTAAAACACAGAAATTAGCTGGGTGTGTGGTGCCTGCTGTAGTCCC
 AGCTACTCAAGAGGCTGAGGCAGGAGAATTGCTTGAACACGGGAGGCAGAGGTTGCAGTGAGCCGAGATC
 ATGCCACTGCACATCAGCATGGCGACTGGACTCTGTCTCCAAAAAATAAGAAAGAAAGCAACCCAAA
 CATAAAACCCAGAAATTTCTGTGATTGCTCATTACAGGCAATATGGTCTGCTGATCTATTAATAAT
 TGTTTATAAATTAGAGGCTCTTCATTGGGAGATATACTTAATGCTAGATGACGAGTATAGTGGGTGACGG
 CACCAGCATGGCACATGTATACATATGTAACAACTGCACATTGTGCACATGTACCCATAAACTTAAAG
 TATAATAATAATAATAATAAAAAAGAAATAACAGGAAAAATAATTAGAGGCTCTTTACTGTATTTAAGGT
 GTTCAAAATGTTGAAGCTAGGTTAGTATCTCTTACCTTTCCAGCACTGCCCTGCAGCTTTGACGCTG
 CAGAACACCAGTTGGTGGCTGATATTTAGATGATGGAATACTTGGACACATTTGCAATTTTGATTAATA
 TGACATGGCAGTGTAGGTTACATTTTACAATAATTTTTGCGGATGTATATACAGGTGGCATACCCAAGAA
 GGAACAGACCTTCTCTCAGGGGTCTTCTTAGGAAAGTACAGCTTTGGCTTCTGTATCATCAGAATTGGAT
 CCTTCAGGTATTAGGTTGGTGCAAAAGTAACTCGGGTTTGGCAATTCAAAGTAAATGACCACTGAAAGG
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 TAGTCTATGCGATGGTTTATTAACAACCTTAAGTAAACACACATGCATATGTGTGAGTAAGCTGACATCA
 GGGATCACCTTATCATGGAATACTAGGGAAGGTTGGCTCAATCTTCAATTTGTGAAGACCAATCCCCCT
 ACCAGCTCATATATACATATTCCAGGAGACTGTGTTTCTTCAGGGCTCTCTTTGGTTCTCAGCTCTTCC
 TTTCTGAATTAGTGGGTCACTTTAACTCCCTTTGGGTCACAGTCGTGTCCACACTGGGTGGGTCCAGAG
 GTAGAACTCATTGCCTTTCTTTGAATCCACACAAAGACCACCAACAAGGCATTGTAGTTGGTGGAAAAC
 TCCATTGAAGAAAGGGTCTATATTGCAACAACAAGCACTCTAGAAATAGAAATATAAATATCCCTCCTCT
 TAAAAATCAGGTTGCCAATTGACCTCAGCATCAGCATATGTAATCTGTCTCTTCTCTGTGTTTCCAT
 CTTGAGAGCCATCCTATTATCTGTGCTCTTCTTTGTTGCTTTAGGAAGAATTTTGGCTTATCCTTTTG
 TTTTGTCTCTCTCTCCCGGACTATTATGGTAAATGTGGAATTTGCAGATAGGCTTATTTGCGCTCCCC
 AGCCTGCTCCCTTAATGCTCTCTGTGAAGCACTTCTTTGAGTCTCCGAGGCGAGTTGCTGCCCCCCAG
 CACCTGCTCTCCCCACTGCACAACCCATGACAGTAACAGCACTGCACATCTATCCCCACAGCTGCTGTG
 AGAACTAGATGGAGGCTATGTGTGAAGCTGCAAGCTCTTGGTAAAGTGCTACAGAAATTGGTAGACACTG
 TTACTATGATAAGATGTTTCAAGAAATAATGGATCGATTAAAGTTTCACTTATCTATTAAAAAGATAAAAA
 CTCTATGATTGAGACCTTTTTTGAATATTGGAATAATTTTTGTGTGCTTTATTAGCATCTGATATGTTTT
 CAGTACACATTTTCATGAGTTATGCTTGAAGATTACTTTTCAAGAAGTTAACTATACATCGCTCTCTAC
 TFGCATGCTGTTCTGTTCTCTGAGAAATAGTGGCTGGGCGAAGGGTATGCAAAACATTTCTTAATATCTCAT
 CCAATACCATTTTCCCACTACTAATTATTCAACACATGGAATGTAGGTCAAAGCATTAAAAAATAAAC
 TAGAACAGCAATAACTTTGGTGGTTGGCAGGTGTTTATTTAAAAATTTACGTTTTAGCCTTATTTTTTAA
 TACTCTTTTTTACATATATTAGATATTATTAACTAAGAAATAATAATCATTTCTATGGAATCTTTAA
 ATAGTAGAAACAATCATGAATAGAAATGAAGATTAGGCCCTATACCTACCTAGGCTCTGTCTATTCTATT
 CCTAACCATTTGCATAGGAAATTTAGATTACCCACTTCTCTTCTTAGAATAAGATTACAGGTTTTTG
 GGCATATTTCCCATGCTGCTGAGCTGGGAGGTTGTTCAATCCCTGCTTTTCTACTCCTCAGCCCTGTG
 ACCCTGAGCAATTCTCTGGCTTGGTTTTCTCATCTGTAAATAGGATATTAATAGAACATATCCCTTTA
 ACGTTGCAGTGATCACATTAATTAGTTGTAGTCAAAACAGTCCATCTAGAACAGTAAGCCCTCAATAAATG
 CTAGCTATCATTTATCAATTTATAGCCAGCCCCACCATTGATGGGTGATGTGACCTGAAGCAATTTAAAT
 TCTCTGGATTTCAGGTTATCTCTCATTTAGGAATATTAGGCTCCATCAGTGGTCTTCAAACCTCAAGTGAGTA
 TCAGAATCACGAGGAGGTTGTGTTATGACACTGAAGCCGGGGCCCACTCCAGATTTCTTATTCAGTA
 GATCCAGGAGGGAGTGAATAATTGTATTTCTAAAAAGCTCCCAAGTGAAGTTGATGGCTGATCTGGAG
 ACACAGCTTGAATTTCTGTCTTACTTAAACAAAACGTGCTTTTTTATCTTGAGTGCACATCAGAACC
 CTCTGGGGAGGTTAAAGATCCCAAGTGAATCACAACCTCTGCAGATGGTAACCAAGATCTTAGTGCTTTT
 AAAGTTCTCCAGGTGCTTCCATTGAGCAGCTAAGGTTGACAACTTCAACACCGCTTTCAGGTGAAAA
 AGAACTATCATTTCTAACTTAAATGAAGGAGAAATGAATTCATCATTTCTGACACCGTTATCTATTCTTTT
 ATGATGGGGCTTATCCTATGAGAAATAAACATTTACTAAGGTGATGCATGTTTTTAGAACATCCATTGG
 GAAGCATGTTGTACAGCTTGTAGTAAACAGCATATGGCTGATGCAAGCTGTTATAGGCTTTGCAAGTTA
 TTTTTTATAAATAGTTTTGCTGTGTCTGTTGATTGATTGAGAGTGGTGTGAACATGTTTCTATGCA
 TCCCAGGGGGTGTGCTGCACCTTTAAGGGGGCTCTTTAAATCCAGCTCTTTTCAATTACAAATCTATGA
 CCTTGGATGAGTTTCTCACTTTTCTGTGCCACAAGTTCAGTAAATGGAGATAATTATAGAACTTAC
 TCTATAGAGCTTTGAGAATCATACAGGTAAGTTATTTACGTAATTAGCACTCAAAGTGACCATTAAAT
 AATCTAACGTTTTTAAATATATTAATAGGCCAGATGAGTGGCTCACACCTGTAACTTACAGCACTTGGG
 AGGCTGAAGTGGGTGGATCACTTGAGGTGAGGGTTCAAAGCCAGCCTGGCCCAACTGGCGAACTCCGT
 CCTACTAAAACGTGAAAAATTAGCTGGGCATAGTGGCTGTGTCTGTAGTCCAGCTATTGAGGAGGCT
 GAGGCAGGAAAAATCGCAGTGAGCGACTACGCCACTGCACCTAGCCTGGGTGACAGGTGGGAGCTCC
 ATCTCAAAAAACAAACAAACAAACAAATAATAGTTTAAATATTTTAAATATTTCAATATATAAGA
 TGTAAATTTTTATTTTAAATATATTAATAATAGATAAGTTTAAATACATAAAAGTAAATATATAAATAAT
 ATGTTTAAATGTTTACTGAAAGTTTACATTTTTCTCTGTATTGCTAAGAGCAATTTATTGCCTTATATGT
 TGTGTAAATATCTAGAAAAACACCATATGTAATTTTCCAAATATAAACCACTTGGCTCCTGGCAAGTAGG
 ACTGCTGCTGATTTTTTTTTTTCATCTTCTGTCACTACTGCCACTCTGAGATCACTGTTGTCTTCCCA
 TATATAATCACCTCTAGGTACACTTCTTTTATTATTTCTACGCATCCTCTCCACTTTGCTGCATTCTTGT
 GTGCATTCTTTTCTCCACGTTGGAAGAAGAAATATGCATTTAGGCGAATCCCAACCCCAAGGCAAAAAAT
 TACTAGCCAGTGTGAAAAAGAAAGCAAGAAATTTTTGGTTATTTGTGCTGTAACCTTTTGTGTCGGT
 ACATATGCTGCGCTTTTTTTTTTCCCCCTAGGGGTGGAATGGGGGTGGTGTAGTCAAGGATTAAGTCAAGG
 TGTGAGTGTGCTGCTTTTTTTTTTCCCCCTAGGGGTGGAATGGGGGTGGTGTAGTCAAGGATTAAGTCAAGG

26/139

CGGTGTTGCCTACTGTGTTGGAGAGACTAAGACTGGGGAAAGATTCTCCAAGGCTGGGAAATGCAGACGT
CCAGTCTTGAAAAACAGTTTTGTCTGGTTCGTTATGTGAGAAGAGGAGTGTATTCCTGGAAGAAGGCCCA
CAAAATATACCCAGAGCCAGGTGCCCTTTCTAAGACGAATCAACATTCAGTCAACAAGTTCAGCTAATATA
TGACAGAAATACAAAGATGAACAAGACTCCTGACTTAAGCTTACAGCTGATGGGAACTTGGGAACTGGGA
CAGAGAATTAATAACAACGTGGTTAGGTACAACCTTACCTGCGCCAGAGGAGTGACGGAAGGCCTTGGAC
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AACAAATCAGTACGGTTGGCCACCCTATCTTTGTGTGGGCATCTGCTAACTGAGTCATGGGCCTGTCTGG
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AAGAAGCCAAATAAAGTAATTTAATAATATATTTTGTGTTGACATAATATAGCTAAATATCAATTTTGAC
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GTGGTGTACGTTTTTCACTTATAGCACACGAATTCAGATGCTACATTTTATTAGGAATATTTAATCTG
TAGATAGATATCGTAAAAATTACATTTGAAAAAATAGATTAGACACCTAAGTTGTTACAAGCATACTT
AAAAGTTTTCAATGACTGAATTGAGTATCAGTTTTAAATTTAAATCAATGAAATTAATTAATAATGAAAT
GAAAATTTAGAAATATTCCTCAGTCACGCTGGCTACATTTCAAGTGCTTCATAGCCACATGAAAGCTGT
ATTGGACAGCAAAGAAGTGAATATATTTGGAATAAAATTTTAAAGTGGACACATTTGTGTACTCTCGT
TAGCCATGCTATTGCTATTTTTCCTATAGCTAATTAACCTTAAAGATCCAGTAGGTTCTCCACCTT
TTTTTAAAGCATTTAGTTCATGTCGACCTGTGATAGTGGCAGCACTTTCTTCTAAACATACATGGAGGAG
TTGCCTGGGCTTGTCACTCAGATTCTGGCACTTTTCATAGAAAGAGTCTGAATTATCTGGAAAAATCTTT
GGTAACATAGGTGAGAATCTTTTCAGCTCTATTGTTATTCTGCACAGATGGCTGTTGCTTATGAAAACAA
TCTCTCAGCCTCTAGTCCAGGATATTACTCATTCCTCAGTTCAAGAACTCTAGGGTGAGAGGAGAAAGG
GGTTCAATTAGCAAGATTTATCAAAATCGGTTGGTTTATGCACATCCGTTGTTTGGACATGGTGATTCC
AAGAGACTCTTAATAAACTTTTCAAAGTAGATGAGAGACAGTTTTTCCCTCACATGCTGTGGCAATATT
AATCTATGTTTTTCTGTTCCACTGGACTTTGTAATTGAATTTTAAAGGAATGCATACAGGGCTTCATATTT
ATATATAAAATATCCATATCCAGTGTGAAAGAAATTAACAATAAAATATGTACCTGTATAAAATTTGTG
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GTACTAAGGACAAAGAAGGAGCGATTAGAGGTTGGATTTCCTGAAGACCAACAACATTTTGCATAGCTC
GTGAGGACTCTCTGATATAAATCCAAATAAATGATGGTTTGGTGTGTTGATTGCTTTTGATTGACATTT
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TGCACCACTGCACCTCCAACTGGGTGATCGAGTGAGACCCATTTCAAAACAAACAAAAAATAAAAAAT
AAAAAAACAAATAAAATCACACGCCCTCTTTTTCACCTCAATCTGTTTTCCAAATAAAATATCAAGA
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TAATACATGAAATGGATTGCTAATGAGGTTAGGAAGGGGAAAGACTGGGGAGAAAAATAGCTAACTTTT
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GACAAGCAAGAACCCTGCAATAATAGGAGACATTTGTTGGGTGGGGAGAGCAACCTAGAAGGGGCAT
ATACCCCTTACAATTTATAGCTCTATGCGCTAGAATTAGTTATATCATTTCTCTAGATATGAGGGGACTA
GGCACTGTACTTCAGCTGTGTGCTCCAGGAAAGGTAAGGTATGGGGAATGTGGAGCAATAATTTATTGA
AGCAAGAATCACCAGTGGATGCTAAATTCGTGAGGGAACAGGACCAGAAACAGGATATTTTAAAGT
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CTTCTGATATGATACCAAGGAGAAACCAACCTCATTCTTGTGATGTTCTGCAAAAAATCCATAACCTG
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TCAAGGTCTAGAACGTTCCAGACCAAGGAGGCTAAAAGAGACAGGATGCCTCAATGCAAGTATAATCC
TGAATTGGGCTTTGGGTGAGAAATGGGCATTAGTAAGACAATTTGGCAAAATTTGAATAAGGTCAATAGA
TTTGAATAATACTGTACCTATGTGAATTTCTGACTTTGATCAAGCACTGGGGTTAAGTTAAACAT

27/139

AAGATGTTGTTTTTGGAAATACATGCTGCTATATGCAACTTACTCTCAAACATCTCAGAAAAAAATAG
ATAAGTTCATAGATAGATAGATGACAGGATAATAAGCAAGTGTGATAAAATGTTAGCATTGGGGGAATG
TAGGTAAAAGTATATGGGAATATTTTGTACCATTTTCTCAACCTTTCTTTAACTCGTAAATTACTTAA
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GCTAGATCATGTTTCAGTCTGGGATATACTAAGTTTGGAGTTTCTGTAAATGTCCATGTGAAGATGTC
CAATTGGGAGTTGGATATTTTATTATGTTTCCATTCCCATCAATCGATAAGCTTCAGAGGAAATAAGAGT
GTAAGATTTTTTTGAACAACAGGAAGGAAGATTGTAGTAAGATATGATGGCATAATGGTATATGGAAGA
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GGCAGAGGTGAGACTCCATCTCAAAAAAAGGATGAAGAGGGATGAGGAGAACTCAAGTTA
TATTAGCCTGAATGGAATAGATGAGTGGAGAGATGGGCATGATAGGTGAGTTAAGAGGAAATTTCTTGC
CTCAGCAACCACTCAGATGCTTTGTGAATCTAAATATGTGTTGACATTCTAGTAGACCTAGACCTGGG
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CATAGTTTCTTAAAGCTGAACCTCAGAATGTTAATGAAATTAATGGAAGCTATTTTGTCTAGAAGA
TATTTTGTATAAACATTTCTTAAATGAAGAGGCTCTAGAATATTTATTTATAGAATTTAAATATAG
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GTTACATATGTAATTTTACTGTTATAAATATGACTGAGTCAATTTTTTTTCAAAGATTTTGTCTACAATG
GGAGGCACAAGGAGTTTAGACAGATGAAGACTCTTCTAGAAATCTACCTAATCTATCACATTAGACCTG
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CAGAGAAAAAGTTTGAAGAGGAGAGAAAGAAACAAAAAGAAAGGAAACAGTAGACATATAAAGAA
AGCACCTAAACAGTGAGATGCCCCAGCTATGCACCAGCAGCATGGTGGATTACAGTAGAGTTTTTCTAC
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GCAGCATTTCTGTAGACAACGACTCTCACTCTCCCTTATTATGGAGGCAGAGCTGTTCTCTTTGTCCTCG
TTCTCTAGCCTGTGATATTTTATTGCTCAAGAGCTATAGAATTGTATCCATGCCATTTGTTGTCTCT
CCTGATGGGAATTCATGTAATTTGAAAGCGTTTATCCTCTCTTAGTAGAAAAATGGGCACCTTGGAGGCAA
TGAAAAATCCCCACCTTTGTCCACGGCAGTGAATACTCTTCACTGCTGCTTTGTTCTAAAGTTTCTACT
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GGCCGCCGCTGTTCACTGATGTTTACACCTTTTGTGCTATTTTCAACCTGATCAAAAAATAAATTTGATT
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GTTATTTTGTAAATAAAAAACAACACTGACAAATAACTATGGGGAGTAAGAAATTACTTGGAAATGGA
ATATGTTTAAATAAATTTTGTGATACACTGCTTGACTATTTTCTTTTGTCTAAATCAAACTCCC
CTGCTTTTCTCAGGAGGTTGTTTTGAAAGAAGGGTAATGTTTCTAATGAAATGAACAGCTCAACCTTC
CCACCTCTCGCTTAAATGCCTCATTTTGTGTTTACTAACAATGCAACACGCAAGGCTTTATGGTAA
AGCAAGCAATGTGGGTTTCTAACAGGGCAGTACACACCCGTAAGTTGCTGGGAAACCACTTATGTAATGGT
GGATTTATTGAATTGGAACAGGAATGGAGATTGGAACAACAGGAAGTGAAGTACCTGTAGGGGTCTCAG
TTGTCCTGGGCACTGTGACATGGCACCCAAATGTCATGCAAGAGTGGCCCTTCCAACATATGCACCAATC
TGAATCTCTCCAAGTTTCTTGTATTACACCAATAAACAATGAAGAGAACAGCATTGCCAATAACTTCAGT
AATAACTTTTGCATCATATTACAAGGGTGGTGGGCTGGCACTTTGTGTTGCTCATGGGTATGTCCAAAAGA
AGGGAGTGGTGGCTAGACTCAGTTCTCTCTTTAGATTTTAAGGCAAAATTTAGCAAACTCTATGGCAGATT
CTTCAACTATTTGTGACAGACAGATTGTCTACTTTTCTGGGGATTTATGATTGAGGCCCTTTTGGGGG
AGCTTTGAGTGCACTGAGGCCAGATAGAAGGGCAAGAAGGATGGGAGCAGCTGCATGCTAGTGAGCAAT
TCAAAGTTGGATTGTGCTGACTGGAATAATCCCGGTTAGCAAAATCAACTATCACAGACTTCATATTTCTT
CAGATGTGCAGCCTTTATAACATATTTGTAATGCTAAAGGACTGCTCCACAGGGAGGTTACAAAGAGAA
AAGCTCTGGGTGGTTGTAAATGGACAAATGTAAAGCCTTACTAGTAGTCTTACCATTCTCTCAGCTC
ATAAAAAAGTCTCTCTCTCATTTGACTATGCCTCAAATCTACTGCTTCTTGGATTATTAACACTCTTT
TCTCCAGGATCTTAAATCTCTCTGTTATAAGTTGAATTTGTGTCCTCCCTCAAAATGATATGTTGAGGT
CTTAAACCCAGTATCTTAGAATGTGGCTTATTTGGAGGTGGGGTCTTTACAGGGTTAATGGAATTA
ACAAGGCCACTAGGGTTGGCCAGTCTTTTTATAAGGAATCCAGTATGACTGTGTCTTTATTAAGGG
AAAATTTGGACAGAGACACACATAGGGAGAAAGACGTGATGATGAAGGCAGAGTGGGGGGTGTGCTT
CTATAAGCCAAACGAACCCCAAGATTGCCAGCAACCCCAAGACTACAGAGAAGCATGCAACAGATT
TCTATCACAGCCCTCAACAGAACCAACCTGCCAATGCTTTGATTTTGGACTTTTACGCCCTGGAACCTG
TGAGACAATACATTTTGTATGTTTAAAGCCACCCACTTTGCGGTGCTTTGTTCCAGCAACCTTGGGAAATG
ATTACACTTTCTCATCTGTGATCACAGTGAGGCCCTGTGCACATCTTCACTCATTTCTTATAGAAAGC
TGAAAGCCTATGGACAAAGGATAATTGCCCTGGCTGACGCATATGTTGAAGGCAGCTGCTGGCAGGCAAC
CGGAGACTTTACCCTGGTCTAGTGAGAGGAAGTCTATAGGAGGAGGCAGGGAGCCTTCTCTGGCTGGCA

FIGURE 1, page 27 of 93

28/139

ACCCAGTGACTCAGGTTGTTTTCTTACTCCAAGGATCTCTGTGCAAGTAGGAATCCTGACATCTTCTCTT
TTTCACTTGTATGAGACCTGCTTGTGTAGAGTAAAGAGCAGAACTTAAGAATGGAATCTAATCACC
TTGAAAGAAATATCTCTCATCTCCTCTGGTGGCAAGGATTGGGATGTGGAGGTTATAGTTGGAAAATTG
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CTTTCAACGAAATAAACACACCTGACATCCTTAGTAAAGAGAAAGCTTCTGAAATAAGAGTGAGGACA
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CCTCACACAGTACTGGTAGGGCTGGGATGTTATTGCTTTTGTCCACCACTTCCAAGTGTAGAAGTCTAG
GATGATCACAGCAGTTAGAGATGATCCATTAGATAGTCTATATTAGGGAAAGTATCCTTCAATCCATGG
TGTTGAACATTCGTAGGATTAAATGAAAGAAGCCAAACCTTTCTAGATCTTATTTGGTATATCAACAG
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CCATACATTAATAAAGTGAACACCATTATATAAATAAATAAATAAATAAATAAATAAATAAATAAATAA
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GATCAAACTTCCAAATTTATATGATGACTCTCTCTGGGCAAGGACTGAAGTGGCAGGAGAGGTGAAAG
AAGGAATCAGGACAAAAGTAGATGCTAAAAGGAAAACAGTCTGTCCCGTGAGAGGAAAGTACCCAAAGA
AACAGAAAGAACCTCATGATGGAGAGTAATACAAGTTGAATATCCCTTATCCAAATGCTTGCAGCCAGAT
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TCCAAATCTGAAATGCTCAGTGAGCATTCTCTTCAAGTGTCTTGGCCCTCAAAAAGTTTGGGATT
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TGCCAGGCGCGGTGGCTGACACCTGTAATCCCAGCCTTTGGGAAGCCGAAGCGGGCGGATCACAGAT
CAGAAGATCGAGACCATCTGGCTAACACGGTGAAACCTGTCTCTACTAAAAATACAAAAAATTAGCT
GTGCCGTGGCGGCGCTGTAGTCCCAGTACTCGGGAGGCTGAGGCAGGAGAAATGGCGTGAACCCGGGA
GGCGGAGCTTGAGTGGCCGAGATCGCCCACTGCACCTCCAGCCTGGGTGACAAATCGAGACTCCGCTCT
CAAAAAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATA
GAGAAGCAGAAATCTACAGAAGATATTGTTCAAGCCCTGCTATGCTAGGTTCTAGATAGCACCAGAACTGG
GCAGGCAAGAAACGTCAGGCCAGGGGTCTGGTTTAAACAGAAGAGGTGCTGAATTTTAGGATCTGAAT
AGCAAGGGTTTGGTTCAGGAAGTCAGTTTTCATGTAAGAAATGAAGGTGAGCGGATCTTAAATCCCTGAAAG
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AGAAACATCCATTGGAGGCTGGAGAACAATAATGGGAGGTGAATAGACTGGGGACATAGTGCCTGGGTG
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AGAATAGGAGGATTGTTGGGGCAAGACCAGTGGTCTTCCAGACATTTTATCAGAGATAACAAAGCAGA
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AGGCAGGGATAGAACGTTGCAATCAGAAGACTGGCCAGGAGGCGGCTGGGTGGCTCACGCCTGTAAT
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GCCACTGCACCTCCAGCTGGGCAACAAAGAGTGAACCTCCGCTTAAAAAAGAGGAAAAAGAAAA
GAAAAGAAGAGTGGCCACAGATTGGCTTGGCTGGGAGAAGGCATTTTTTTATAGGAGATATACGTGAGTT
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CAGAGAAAGGCTTGTACAACTCTGAGGTCTTTCTTTCTTTCTTTCTTTCTTTCTTTCTTTCTTTCTTTCT
CTTGCTCTTGTGCGCCAGCCTAGAGTGTAGTGTGATCTCGGCTCACTGCAACCTCTGCCTCCCTGGT
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GTGATCTGCCACCTCAGCCTCCCAAGTGTGAGATTACAGGTGTGAGCCACCGCACCTGGCTATTTT
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GAGTTAGGTATTTCACTGGACACATGTGGAGAATGTTGGTGAATTAATGCAGAGGGAATGTGGTTAAAA
AGGTTAATGTAAGAAGGTCATGTGGGACTGGAATCACAATAGAGAAACAGAGGCCAGAATGCTGAAC
TCAAGGAAGTGGGTGACCATGGGTGATTAAATGTACAATAGGGCTGGGTATAGTGGCTCATGCCTGTA
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CATGGGGAATCCCAACCTACTAAAAATACAAAAATAGCCGGGCACGGTGGTGCATGCCTGTAACCCC
AGCTACGTGGGAGGCTGAGGCAGGAGAAATCGCTTGAACCCAGGAGGCAGAGGTTGAGTGGCCGAGCT
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AGGCAAAATCACAGGATAGAAAGGTGGAATGGAGGTGACCAAGGTGGAAGGAAGGAGGATTGTTCAA
TGGGTACAACATTTCTGTTTGGGATGATGAAGAATTTCTGGAGATGGACAATGGTGTGGCTGCACAACA
CTGGGAATGTGCTTAATGCCATTACTTAAAAATGGCTAAAAATCATGCATTTTATGTTATGATATTTTAC
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GGCTCATTGCAACCTCCACCTCCAGGTTCTAGCAATGCTCTGCTCAGCCTCCCAAGTGGGATT
ACAGGTGTGTGCCACCATGCCTGGCTAATTTTTGTATTTTGTAGTAGAGTGGGTTTGGCATGTTGGCC
AGGCTGGTCTCAACTCCTAACCTCAAGTGTATGCTGCCCACTCAGCCTCCCAAGTGTGGGATTACAGG

FIGURE 1, page 28 of 93

29/139

TGTGAGCCACCATACCTGCCATATTTACAACCTTTTAAATCATAGGAAAGAAACCACTAATGCTTTGACAA
CTGTGAGATTTTGAATCTCAACTGTGAGATTATGGTTTGTGGAAATTTCTTTTATGTGATTAAGAAAGATA
CTTTTGGCCAAAAAATTTGTTTTCGCTGTGATGCAAGTTCTCCTGGGTAAGCACCTTTGGTCTTGTGTT
TGTGCATAGCATACAGAGCAGCAATTTGTATATTGCTAAAGAAAGCCTGTTTTTTTTTCTTGTGTAATTTA
TTTAAGTTCCTTGTAGATTCTGGATATTACCTTTGTGAGATGGATGGATTACAAAATTTTCTCCCAT
CTGTAGGTTGCCTGTTCACCTGATGATAGTTTCTTTGCTGTGCAGAGCTCTTAGTTTAAATAGATC
CCATTTGTCAATTTTGGCTTTTGTGCCATTGCTTTTGTGTTTATGTCATGAAGTCTTTGCCATGCTTA
TGTCTGAATGGTATGCTTAGGTTTCTTCTAGGGTTTTATGGTTTTAGGCTTATGTTTAAATCTTT
AATCTGTCTTGAGTTAATTTTGTATAAGGTATAAGGAAGGGTCCAGTTTCAGTTTTCTGCATATGGCT
AGCCAGTTTTCCCAATACCATTATTAACGGGGAATCCTTTCCCATAGGATATGAACAGACACTTTT
CAAAAGAAGACATTTATGCAGCCAACAAACATATGAAAAAACCTCATTATCACTGGTCATTAGAGAAAT
GAAAATCAAAACCACATGAGATACTATCTCACACTAGTCAGAATGGTTGTTATTAAGAAAGTAAAAATAT
AACAGGTACTGGTGAAGTTGCGAGAGAAATAGGAACACATATAGTGTGGTGGGAGTGTAATTTATTTCAA
CCATTGTGGAAGACAGTGTGGCGATTCTCAAGGATCTAGAACTAGAAATGCTATTTGACCCAGCAATCC
CATTACTGGGTATATACCCAAAGGATTATAAATCATTTCTACTATAAAGACACATGCACACGTATGTTTAT
TGCAGCACTATTCAATAGCAAAGACTTGGAAACCAACCAATGTCCATCAATGTTTGACCGAATAAAG
AAAATGTGGCGCGTGAACCCGGGAGGCGGAGCTTGCAGTGAGCCGAGATCCCGCCACTGCACCTCCACCT
GGGCGACAGAGCGAGACTCCGCTCTCAAAAAAAAAAAAAAAAAAGGAAATGTGGCAGATATACACCAT
GGAATACTATGCAGCCATAAAAAAGAAATGAGTTTATGTCTTTGACAGGACATGGATGAAGCTGGAAACC
ATCATTCTCAGCAAACTAACACAGAAACAGAAACCAAACTGCATGTTCTCACTCACAGTGGGTGAG
TTCCATAATGAGTGGGTGAGTTCCACAAGTTCCACAAGTTTCCACAAGTGGGTGAGTCCACAAGTCTAT
AATGAGAACATATTTGCACAGGGAGGGGAACATCACACACCAGGGCTGTGCGGGGGTGGGGGTCAAGG
GGAGAATAGCATTAGGAGAAATATCTAATGTAGATGACGAGTTGATGGGTGCAGCAACACCATGACA
CATGTATACCTATGTAACGAACCTGCACATTCTGCACATGTATCCAGAATTAAGGTATAATAAAAAAG
AAAAAGAAAAAGAAAAAACCCCTGCCTTTTGTCTTGGCAGTCATCATTCTTCCATCTTCTCATGTTTT
CTTATTTAACTCAGTAGTTCTCAATTGACAGCACAAAAGAAATTAAGTGGAGAGTTCAAAAAACACCTAT
GGCTGACTCCCCAAGATTCTGATTTCCTTGGTGTGGGTAGCCTGGGCATGAATATTATTTAAACCTC
CTCTCATGATTCTAAGGTGGTAGCCAGGATTGAAAAATGCTGGACTTCAAGTTTTGTTTTCTTTCTTT
TCTTCCAAAAAGGTGAAGCCCTGACTTGGGAAGAAATCAATGCGAGTTAGGCTTATGTTTGTATGTCAC
GATTCTTAAAGATCAGTCCATTGATTCTCTCTCATTCTCAGGAGAGCATTGGTGTCAAAATCACAGCCCA
AAACTCTTACCCTAGTTTACAGCATCTAATCTCTTCTCAGTCTGAAACTGTTTTTGTCACTCTGTCCATATA
ATCACAGTGTGTGAGAAATTTCCAGCTAAACATTGTCTCAAACTTTTTGTACCTAGTTTTAAATCAAAAT
GTAGTACAAAATATTATAATACACGGGCTTTAAATATTGAGATTTTGGTGATCTTTTTGTAGAATGC
AAATACTAATGAACTAATTTTTCTTTTCTTTTCAAACTATACATTTCTTCTAAACTCTCTTCAAGT
AGATTTTCATAAGTGAAGAACCCTTGAAGATTATTTAATAGAATTCCTTAATTTTAGAGATGAGGAAA
CTGAGACTCAAAATATATTAATTAATTTATCTAAGTGTCTTAGTCCATTTTGTGCTGTATAGAGAGCAT
ACTTGAGACTGGGTAATTTATATTGAACAGAAATTTATGGCTCAGATTCTGGAGGTTGGAAGTCTGA
TATCAAGTGTCTGGCATCTGGCAAGGGCCTTCTGGATGTGTCTACATGGTGGAAAGCGGAAGGGCCAGA
GGTAAATGTGGCTGAATTTGTGCTTCTATTATGGCATGAATCCCATCCATGAAGGTGGAGGCTCATGG
CCTAATCATTTCTCACAGGCACCCTTTTAATACTGTTACAATGGCAATTACATTCAACATGAGCTTT
GGAGGAGACAAAATCAAAACCATAGCACTGAAGTTATACAACCTAGTTAAGAAGAGAGAACCTGAGACTG
AAACCTTATGTTTTGACTCCCAATCCAGAATGTTGATCCCTACATCCACCCGCTTCGCTTCTTCCAT
TCCTTTCTCCTGTTTTCTATCTATTTTCACTAAGAGGGCAAGATATTGCTAACTGCTACACACCCAAAT
GTATACCAGGCAGGTGAGAAATGACTCTAATCATTTTATTTAATGAGGAGAGAAATTAATCTTCTACTAA
ACAGTGACAAGTGTGTTTTTAAAAAAGTATTGTGCACAAAAAATACTACTTTCAGCATAGGCTA
TATTTTCAAAAATAAATTTACAGTGGGAACACAGAGCTATTAGAGTGTCTGGTATAAATGATTTTATT
GTTACTCTGCTTTTTTGAAGAAAGTGTGTGAAGCAGAGGTAAGTAGTACTGAGGAAATAATAACTAAA
ATACTAAGGACGAGATGCACATGGGAAAGTTCTTCAATTAAGTGTACGTTGGTGGAGAAATGATGTTCT
AGACAGGTCAATCATGGAATTAGAAAAAGTTGGGATCTTGAGTTGTTGAGTTCAAACTCTTAGTTTTAA
ACTGAAGACTTCAAAATTTGATTGACTACAGATCAATCAACAACCTGTTGGAGTTGGAACCTGAATCTG
ATTCTCCATCTTGTGTTGGGATATGAAAAAAGGACATTTAAGAGTATTTTTTATTTATGAAACTA
ATGTATCATCATGTAATAATATGAAATAGAAAGTTAAAAATTAAGAAACAAGATGTGTTTTAT
AATCTCATTTTCTTACTTTACGTAAGATGGTAAGCTATTTTGAATTAATGTTTTAAGAAATAGTATT
ATAATTCATGTTAGATAAAGATTATTTAACCTTTCCCTTTAACAAGTGTGTTGGGTTTTTAAAGTTT
GCTTCCAGTTTTCCGTAATGATGCTTCAATGGATATCTGTTGTTGTTATCTTAGTATGATCTTAGAT
TAATTCCTCAAGATAAATATTTAAGGTATGGTATATGTAATATCTTGATACATACTTCCATATTTCCC
TCCAGAAATGTGTGCACCTATTTAAATGTGTGTGGAGGTGCACATTTTAACTTCCCTATTATCTGGCT
GCCTTCTATAAATAAGACTACCTGGTATTATGGCTCTCCTCCAGAAATCTAATCATTTAAACACATGAA
GTGAATGTGTGAATGGACATTAAGTGTGCGCCAAATGTGGAAGAAATGTTAAGTGTAATCAAGGCAAC
TGAAACGTTAAATACACCTTCCATTCTCCGCCACATCCATGCTCTTCCCATACTCCACATCTGCTCAC
TAAATTTGGAATAAATCTGAATGAACGAGAAATGTCTGACTTACTGGTGTGTTTAGGTGAGTTTTATTG
AAACACTGACTGACCCCACTCTAATACCATCACCTTAATGTTTGTATCTTAGATTAATCTCTCAAGA
TAAATTTAAGCAGTATGATGATGTAATATTATGATACATACTTCCATAGTTCCAGCAACCACTGTGC
ATCCTGTGTCCCCAAGGACACTGCAATGACTGTACAGTGAATGTGCTCGGTTGAGGAGCAAGTGGTG
GCTGAAATCCAGCCCCAGTCAGCTCCCCAAACCAACCACTTTTACACAGTGTCTATGTGTAAAGTGGT
TTGCTTTGGGGAGATTGATCCCCATAAGGGATCAGCACCAGCCCTGTGTCTATCTCTTCTCTCTGGGG
AGATGTTGGCTATTTTGTAGCTGGAGAGGGGACGCAATTTGTTGTGAGGAGACAGGTTCTTAAGTTCC
ATTGGTACATGCAGGGCAAGACAGGCAGAGGGAATCTGTCACTGCTACAGGCACTTCATAAGCCAGGTA
TAGACGATAATTGAAATGGATTGATTTCATAGTAGTCTAATACAGAGTGGTGTACAATCTCTGTATGTG
CCTATTTAGAAAATAACTTCATATTTAATCTTCACTTTACATAAAGATATGTGTATTAATACACCTT
TATTTTGAACAGTATTTTATAGATTTTAAATTTGGAAGACAGTAGAGATTTCTATCTAACCCACA
CCGAGCTCCCGTATTAGTAACATCTTGCATTAGTATGGTATATTACAATTAATGAACCAATACTGT

FIGURE 1, page 29 of 93

30/139

TATTTTATTATTAACCTAATTCATGCTTTATTCCAGTTCCTTAGTTTCTACCCAATGTCCGTTTCTAT
TCCAGTATCCCATCCAGAATACCACATTACATCTGTGTCATGAGTTTCTCAGATTTCCATGTTTTG
ATGACCTTGACAGTTTGGAGAACTAGGTCAAGCGTTTGTAGAATGACCTCAACTGAGATTTGCTC
ATGTTTTTCTCATGATTAACCTGGTATTACAGGTGTTTGGAGGAAGACCACAGAAATGAAATGCCATT
CTTATTACATCATATCAAGCATATATTCTAACAATATGATTATGACAACATAATGTTGACCTTGGCCAAC
TGGCTGGGGTAGTATTGTCTAGTTTCTCCTCTGTAAAGTCCCTTACCCCTTTCCACACTGTACTC
TTTGAAGGAAGTCACTCTGCACAGCTCACAATGAAGGAGTGGGGAGCTATGCTTCCCTCTTTGAGAGTT
GTGATGTACACAAAATTATTGGAATCTTCTGCATGGGAGATTGTCTATTCTCCCTATTTATTTATT
TATTGAATTATTTATATCAGTATAGCTTCATGGATATTTATTTTAGACTTTGGGCTAAAAACAATACTA
CTTTATTTTATTGTTCAAATTGTTCCAGCTTCTAGAAGTTATATTTTATAGAGAAGATATGTTTTAAA
TATAAAACACTTTAAAAAATGAAGTCAACAGAAATAAAATATTTTAAATTTCCCTAATGGGTGTTCT
TTGTACCATGTTTCCATCAAATAACATTCTGATTGAAATCTAAAAATTAGTGTGTTGATTTTAAAGTGCTA
AGATCAGAGAAAAAGTCAAGTTTCCAGACTGAGTTAGGCAACATGTGACTCAGAGTTATAAGGAATA
CCTTCCCATCTCTGCATTGCAACCAGTGTACAGTTACAGAAGTGACTAGTGTAACCTTCCCTCCTGGG
TTCCAGCTGCCAGGACTTACTTTAGTTCTTTTAAACATATCCTTCCACCAAGATAAGTTTTTGAACAG
TTTCCCCATGAGTGCTCCCCCACCCCACTTGTGCCTTTTATTCAATGTCTTTATAATATTTATTGGTTG
GCTGGTGCAATTGGTGAGAGTTTGGCAAGTCTGAAATTTGTAGAGCAGGCCAGCAGGCTGGAACCTCAGGCA
GGAGTTAATGCTACATTCTAGGGACATTTTTTCTCTCTGGAACCTTCACTTTTGTCTGCAAGCTTTT
CAACTGATTGGGCAAGGCCACCCATGTTATGAGGGGAAGTGTACAATCAGTTGTCATTTAAGCCAATC
AGTCAACTGATGGTTGGTGCAACCATATCTTCAGAATACCTTCACTACAACATCTAGACTCATGTTTGA
TTAAATAACTGGGTGCCATAACCTTGGCAAGTTGACACCTGAAATTTGGCCATCACAGTGACCAAGACAGA
AAGTGTAATGAGCAGGAAGCACCCAGTGTACAGGACAGTGAAAGATGAGCCTGGAGACGGGGAGTGGA
GGAGTGCTTTGACAGAATGGTCAAGAGAGATGGCATCTGGGTGGAGATATGAAAAGATGTAAAGAAGGG
AAGGAACCAAGTTTCTGCAAGAATTTATACCTTCTACAATTTCCAGATGATATTGATGCTGTGCCCTGGA
GCCATACCTTTGAGAACCACAGAGTAAGGTATACCTCTGTTATTATCCAATGAATCCTGAGAAAGCCCA
TTAATATCTCAGTGTGACCATTTTTTCTCAAAATTCCTACCTCACATGCTCTGAGGGGCTGCGAGCTTTT
CTGGGAAGGTAAAACTCAAGAGGGAGGCTTTGAATGATTCCAGGACAAAGTGAAGATAACATACTACCG
CAGGTAAAGTCTAGGTTTACTTGGAGGTGGCTCAAAACACAAATCCTGTCAATTTTAAAGACATGAGG
CCATGACTCTGGGTCTGCTACTCTGGGCAAGCCATTGAACCCATTAGAACCTCAGTTTCCCATCTGTACA
AAAAGAGTGATAATGGGTAGCAATCCTGGACTGCATTGTGGTAGTGCCATCAAGCAATGAGATTGTC
AGGAAGGAAGTGATTCAAGTACAGGCACTTTGTTATCTGATGCTGTGTGTTGAGTGTGAAGGAGGGG
TTAATTATCTCTATTCTATGCTCTTTCTATTCTCAAAATTTCTTATGTGGGAGGAAAATCTTGGTGCGG
TAAAGATCACAGCCACCCTGGGGTCAAGCAGAGGACTGTGTCAAGCTTGGTAAGGCTCACCATTCAAGTG
AGTGGGAAGAGACTGAACCCCATTAACACAGATGACCTCAAGGCCCTGCCGCCCAACATCTGAGGG
CTGCCTGGCTTGTCTGCACAGGGTGTCTACAGTACTCCTGACTTTGACATAATTTTAACTTAAAGTCAC
AAGGATGCCCTGGATCACAACCTGCTGGAGAAGAGATGGTAGTGGGATTTGTTTCCAGGAGACTTTCTGA
TTCTAGTGGGGCCAGGACCAACCTCCAAAATAAGAGGTCTTGTCAACTGCTGCGAGCCTCTGGCACCTC
TACCCTCTAGCGAGAGGCTGCCTCTCCTGCCCAACCCGTTTCAAGCACGCTGCGAGGCGGGAACCTCAC
TGTGCTGGCAAAGGTGAGCTGGAGACCTGGCACGCAATAAGCTTTTTTAACTGACCTTTTAAATTTCA
TCTTCCCTGGACTTAATCTAGAGAGTCAATTGATGAAACAAACATGCCATTTTCTCCGATTTACGCTTT
TAAATGTCAACAACAAACAAACGTTTATATACACAAATGTTGCTGAAGGAGACTTTTGGCTTTAGACAAG
GGTAAAACTGAACCTCTTAGTGTGACTTTGGTTGATTTTTTAAAAATCTGTAATTGACATATAAAGA
ATTATTAAGACTTTTTTTTTTTTTTCTGGTAGGATTTGAATGTGCTTTGAAAAGAAAAAATAATGCTC
AGTTTCAATCTTCTGTCTATGGGTAGCTAGTTATCCAGCCTTAGTTATTGAATAAGGAGTCTTTTCACC
ATTGCTTATTTTATTTTACTTTTTTGGAGTGGGGTCTTGTCTGTCAACCCAGGCTGGAGTGCAGTGGCAG
ATTTTGGCTCACTGCAACCTCCGCTCCAGGTTCAAGCGATTCCCTGCTCAGTCTCCCAAGTAGTTT
GGATTACACATCTGCAACCCACACCTGGCTAATTTTTGTATTTGATAGAGACAGGGTTTCAACCAAGTT
GGCCAGGCTGGTCTGTAACCTGACCTCAGTTGATCCACCCCACTTGGCTCCCAAGTACTGGGATTA
CAGGCATGAGCCACCGTGCCTGGCTGCATTGCTTATTTTGTACGCTTTGTCAAAGATCAGATAGTTGTA
GGTGCTGTGCTTATTTCTGGGCTCTCTATTCTGTTCCATCAGTCTATGTGCTGTTTGTGTATCAGTGC
CATGTTGTTTTGGTTTGTAGCCCTGTAGTATGGTTTGAAGTTGGATAACATGATGCTTCCAGCTTTGT
TCTTTTGTCTAGATTGTCTTGGCTATTTGGGATCTTTTTTGGTTCCATATGAATTTTAAAAATAGTTTT
TTTCTAGTTCTGTGAAGTATGTCACTGTAGTTTGTATAGGAATAGCATTGAATCTATAAGTTGCTTTGAG
CAGTATGGCCCTTTTATTGATATTGATCTTCTTATTCATGAGCATGGAATGTTTTTCCATTTGTTTGT
GTCATCTCTGATTTTATTGAGCAGGGTTTTGTAGTTCTTCTGTAGAGAATTTACCTGCCGGGTAGCT
GTATTCCTAGGTGTTTTATTTCTTTTGTGGCAATTGTGAATGGGATTGTGTTCTGATTGTTGGCTCTTTGC
TTGACTATTTTTTGGTGTATAGGAAGGCTAAGTGATTTCTGTATGTTGATTTTGTGCTGAGAGTTTGT
GAAGTTGTTTATCAGCTGAAGGAGCTTTTGGGCAACACTATGGGGTTTTCTAAATATAGGGACATGTCA
TCTGCAAAATAGGGATAGTTTGTACTACCTCTTTCTATTTGGATGTGCTATATTTCTTTCTCTTGCCTGA
TTGCTCTGGCCAGGACTTCTAATACTATGTTGAATAGGAGTGGTGAGAGACGGCATCATTTCTTGAAC
TGGACCCCTTCTTACACCATATATAAACTAAGTCAAGATGGATTAAAGACTTAAATGAAAAGCCCA
AACTCTAAGAACCCTGGAAGACTACTGAGGCAATACCATCTTAGACATAGGAATGGGCAAAAAATTTTCATG
ATGAAGATGACAAAAGCAATTGCAACAAAAGCAGAAATTGAGAAATGAGATCTAATTATACTAAAGAGCT
TCTATATAACAAATAAACTATCAACAGAGTAAACAGACAACCTACAGAATGGGAGAAAATTTTGCAAA
CTATGCGTCTAACCAGGCTTACTATCCAGCATCTATAAGGAACCTTAAATTTACAAGAAAAAACAACCT
CATTAAGGAGCAGGCAAGGGCATGAACAGACACTTTTCAACAGAAGACATACATGTGGCCAACAGCAT
ATGAAAAAGCTCAGCATCACTGATCATTAGAGAAATGCAAAATCAAAACCACATGAGATACCATCTCAC
ACCAATCAGAGTGGTTGTTATTAAGAGTCAAAATATAATAGATGCTGGTGAAGTTGAGAGAAATGGGA
ACACTTATATAATGTTGGTGGGAGTGTAAATTAGTTCAATCATTGTGAAAAACAGTATGATGATTCTCA
AAGACCTAAAAATACAACTACCATTCACCTAGCAATTCATGACTGGGTATATACCCAAATGGATATAA
ATTGTTCTATACAAACGACATACATGCATATGTTCAATGACGACTATTCAATAGCAAGACATGG
AATCAATCTAATGCCCATGATGGTAGACTGGATAAAGAAATGTGGTACATATACATGATAGAATACT

FIGURE 1, page 30 of 93

31/139

ATGCAGCCACCAAAAAGAATGAGATCATGTCCTTTTCAGGAACATGGAAGGAGCTGGAGGCCATTATCCT
TAGCAAACTAATGCAGGAACAGAAAACCTAATACATGTCATGTTCTCACTTGTAAAGTGGGAGCTACATGATT
AGAATTCATGGACACATAGAGAGGAATAACAGACACTGGGGCCTATCAGAGGGTGGAGGGTGGAAAGGAGG
GAGAGGATCAGGAAAAAATACTAATGGGTACTAGGCTTAATACCTGGGTGATGAAATAATCTGTACAACA
AACCCCATGACACAAGTTTACCTATGAAACAAACCTGCACGTGTACCCCTGAACCTTAAATAAAAGTTA
AAAAAAACCCCAAGGTGAAGTGTGGTGAGGATGTGGAGAAAAGGGAACCCCTTATTACACAATTAGT
GGGAATGTAATTAGTGCACGCATTTTGGAAAATAGCCAAGGAAAAATTTTTTATTGAGTCAGATGATGT
TACCTTACAGCAATAGCTTCCAAAGGGGATGCTCGAATAGTAGAAGCTTCTCTTTACATTTTCAAACCTC
TTTTTACTTTCTGATTTTGTAGTTTCATAATGAACATGTATCAATACAATAGCACACTATGTATTTTATAA
ATGAACAAATATGGGAAAAATAAGATATGTTCACTTTCTGGCTGACCCTAGTTAGTCTAACTATCAGT
TATAGGATCCATTTGTTCTAAATATTGAAGGCATTTGTTGGGGGAGTGGGGAGGGTGAATGATAGACGCA
AATTCCTTGAAGGAATAGAAATGTGACTACTGCTGAAAAGCAGGACCCATGGAGTATAAATAGAGTAT
TCACTGTGGTCTTTTACATTTTCCCTGGAGGAAACGTAAACAAATCTCAAGACTTCTGGTCACTTTCT
AAGTCATAAACGCCACATAGTCACATAATTATATAACCAGCCCAATGTAATATCAAACGTGTGAGTTT
ATTTTCATCTCACAACCTCCTCCCTTTCCAGTTCTGGCCCATACAAGCCCGCTGCCTGCAGTGGGATGG
AGGAAGATGGTTCTTTTCTCCCTCCCTCCATTTATTTGTCTTTGTGCATCTTAAAGCCAGCCTGAATTT
CTACTCCGTACAGGTTGAAGTGGGTGGGTGAGGAGTGGGGAGAGAGCTAAGGAACGTTGGCGTGAGTT
GTTGTTGTGTTTGTGATCTGGAAGGTGTTGGGAGCTGCCCCCTCACTCAGGGCCTCATTATGGGCTCT
TCGGATAACCCCATGCTCTAGCACTGGGATCTTGCCCTGTGGATCCCTCCATGCAGGTGGCACCACACC
CTCTGGCTGGTGTGATGGGCTTCTCAGCTTTGAGAATAGCAACACACTTCTATTGAAGTCATCTGT
CCCTGTGGGTAGCCACTTGGGCTGGATGCAACTGAACCTGCACTGATTCTCTTGCATGTGGCCAC
ATGAGCTCCATTTCTCCGCAAACTTTGGGTGCACAGCCCAACGACGACACAGACAGCTTTTCTTCCGT
GCCACCAAGTGGTGGGCCAGAGTTCTCTTATCCTTAAGATTTTCAGGTGTCACCACGTCCACCAATTCT
TGGCAGACATGAATCAATACTTCCAAGGTTTGGTGAAGCCCTTTCCCTGGGCTGCAGATGAGGGCAG
CCATGTCTGTCTCTTCCACCTGTTGTGGAAGGGGTTTATGGCAAAACATCTTGAACATCTCTAATTTT
CCAATCTTGATCTCTTCCAGCTGTTGTGGAAGGGGTTTATGGCAAAACATCTTGAACATCTCTAATTTT
TTTTTTTTTTTTTAATCCACATGGTGACCTTAGACTTTACTTTGGAATGTGCCATTTAATATCTGGGGA
CCTCAGCCCAACACAGGACTAATAAGCTCTGTTTAAACATTTTGTATTATACACACATTCATTTGACC
AAATGAACATGTTCCAGCTTTTAAACCTTGCCAGCAAACTACTTAATTCAGTTAATAAAAAGACTAA
AATAATCAGGCCAACCTTATTGGCCACGAACATCTGTTGGGTATCTTAAATGATCCCTGAGTTAATCT
CCACCTTTAAGGAGTTTATAATTTTATTGGCAAAATGATGTTATAATGAAATCTCTGGGCATGAAAAA
ACCTAATATGTAATGTTGGATAGTGTGAGTTTCCCAAAAGTACCAGTATAAGCAATAAATGCTATAAC
TGATCATGAATGTTTACAGTGATTGAGTAGAATCATTCATCTGGTCATGAATAGAAAGACACCTCCC
AGACGGCTGGTCTGCTGCCAGGTGTGCAAGTTTGGGGGTCTCCACACTCATTCTATTACATCTTTTGAC
TTTATCAGCTGTGTGGTGGATCTGTGGTTACAGGCTGATGTGGTTTGGCTGTGACCTCGCTCAAACTCA
TCTTGAATGTTAGCTCCCATAAATCCACGTGTCATGGGAGGGATCCAGTCGGAGGTAATTGAATCACGG
GGGCGGGTCTCTCCCGTGTCTCTCGTGGTAATGAATAAGTCTCACAGATCTGATGGTTTATAAATG
GGAGTTCTCTTTTCACGAGCTCTCTTGCTGCCGCCATGTAAGAAGCGCCTTTGCTCTTCTTTGTCTTCT
GCCATGATTGTGAGGCCTTCCAGCCATGTGGAAGTGTGAGTCCATTAAACCTCTTCTCTTATAAATTA
CCCAGTCTTGATATGCTTTTATAGCAGTGTGAAAATGGACTAATACATGAGCCACATTTGTACAGAGT
TTCTGAAGGTCATTAAGAGAAGTCCATGCTGTGGGCTGAGCTGGGACTCAAGAACTCAAGGAGAGGCCA
GTGCAATCAACACGAAGGCCCATCTTGAACCTCTAAGGCAGGGCAGAGCTGGGTCTTATGGAGACATGT
GGCTTTCAGGTAATCCAGTGAGCACCTGTGTTTCTCTCTATAATTTCTGAGGAATGGATATTGTTCTAT
ATTTTCAGATAGTATAATAATAAATACCTGGAAAATACCTGTATGACCCCAACACAGGTAAATGTCAA
AAAAACCTTTTATCTACACAAAGTTAGACAACAAATCAATAATCTTATCCGTTTATTCTCTCTTCC
AATACATCATGTATCATTTAATGATGGGGATGAGTTTGGAGGAAGGTGTTGTTAGGAGATTTTGTCTG
GTGCAACATCATCAAGTATACCTTATGCCAACCTCAGTGGTATAGCCTACTACACATCTAGGCTTGGATA
GTACAGCCTGTTGCTCTAGGCTATAAACCTGTACAGCATGTTACTGTCTGAATACTGCGGCAACTATA
AAATATGGTAAAGTATTTGTATATCTAAACACACTTCAACATAGAAAAGGCACAGTGAAATATGGTATA
AGAGATAAAAAATGGTCCACCTGTACAAGGCCTTGCCAGAATGGAGCTTGCAGGACTGGAAGTTGCTCT
GGGAGAGTGAGCAATGGCTGATGAGTGAATGTGAAGGCTTAGGGCATTTATGTATGCTACTGTAACTG
TATAAACACTGTGCACTTAGGATACACTAAATTTATTAATAATTTTCTTTCTTCAATCAATAAATAGTG
AACATTAGCTTACTGTATTTTTTTTTTACTTTATAAACTTTAATTTTTTTTTTAGAGATAGGGTCTTGCT
CTGTTGGCCAGGCTGGAGTGCACTGGCACAATCATAGTTCACTACAACATTGAACCTCTAGGCTTAAGCA
ATCCTCACACCTCAGCTCCTGGGTAGCTGGTACTGCGACATACACTACTGCAACCCAGCTAATTTTTAA
ATTTTTGTAGCGACTGGGTCTGCTATGTTGACCAGGCTGGTCTTGAACCTCTGACTCAAGCAATCCTC
CTGCCCTCAGCCTCCAGCATGCTGGGATTATAGGTGTGAGCTACTGCACTTGGCCTAACTCTAATTTTT
AAAATCTTCTTGAAGTGTTTATAATAACACTTAGTTTGAACACAAACACATTTGACAGCTGTACAAAA
TGTTTTCTTTCTTTACATCCTTATTTCTATAAGCTTTTTTCTGTTTAAAGTTTTAAAAATGTTTGTCTG
AGTGCGGGGGCTCACGCCTGTAATCTTAGCACTTTGGGAGGCGGAGGCGGGCAGATCATGAGGTCAGGAG
ATCGAGACCATCCTGGCTAACACGGTGAAACCTGTCTCTACTAAAAATACAAAAAATAGCCGGGCAT
GGTGGTGTGCACCTGCAGTCCCAGCTACTCGGGCGGTGAGGCGAGGAATGGCATGAACCCAGGAGGCG
GAGCTTGCAGTGAGCTGAGTTTGCACCACTGCACCTCCAGCCTGGGCGACAGAACGAGACTCTATCTCAA
AAAAAAGAGTTTAAACCTTTTAAAAAATCAAAGTCACAGACACATGCATTAGCCTAGGCTTAC
CCAGGCTCAGGATCATCAATGTCACTGTCTTCCCTTCCACATCTTGTCCCACTGGAAAGTCTCAGGGA
CAGTAACACCCCTGGAGCTGTCATCTCTCTGATAATAATATGGGCTTCTGGAAGACCTCCAGAAGGACC
TGCTCTCTGCTAATGCTGTTTTACAGGTAATATTTTTTCTAGTAGAAGGAGTACACTAAAAATATGAT
AAAACTGTAGTAAGTAAATATATAAATAGTCATATAGTCATTTATATCATATAATCATATGTAATG
ACATAATTGTTATGGCAGACTTTTATACAACTGGTGGCACAATAGGTTTGTCTTACACCAGCATCACCACA
CACGTGAGTAATGTGTGTGTGTGATGATGATGATGATGATGATGATGATGATGATGATGATGATGATGAT
CTCCATTATAACCTTACAAGACCACTGTATATCTGCAGTACAAAACATCATTTATGTGGTGCATGACTAT
ATTTACTGAGCACCAATATGTGCCAGGAGTGTGCTAGGGGCTGGAAGTGACCTCGAAGTCTAGTAAA

FIGURE 1, page 31 of 93

32/139

AAAACCACACAGTAAACAATATGTGAATTCAAAGTGACATATCCTGTAATAGCTGGTTGCCTACCTG
CTCCCCAGAGAGAAATTAACCTGCTTGCTTAACCTTATTAATTTAAATTCATGTACTTGCAATATAAAA
ACATATTTTAAACATATTAGGAGAAATAGGATGTCTTCTGTAGTGATAGGCTATTTAATGTTCTCTTCAC
TGTGTTCTAAAAAATCGTGATCGAGTGTAACAAAATGGGGAAGGGAGGGTTAGCATAACTCTCCTTTG
ATGCTATGCTGTGGATCAGAAAACCTCATGAATATGTTAACAACCTGGATTTTCTCCTAATATGAAAACAA
CTCTTTGGCTTCTTTTGCAAAATGTGAAAAGTTAACCATAAATAAGACCTTTTCTTTCCACTAAACTA
GGGCACAATCATTTGTTTCTCTTATTGGAGTCCAAATGGGTTTCCATAATCTTCAGATCTAGTAGTTGT
ATTTATCGATGACATAAATGGAAAGACTAAAAGATAAAGTTAAGAAAAATTCAGTGGTTTATGGCTTCAA
CTCTACTGATAATTTGTATATAAAGGGATCCTAAATAGACTGTACACACATTTGCCATTTGAGTTCCA
AGCATTTTGAACAATAGATCAAAAGATCTTAATGCCTGATAGTTGAAAGATTACTTCCAAATTTTTTTTAT
TTTTGTGAAAGCCAAAGTCTTTTCTCAACATGACAGTCACATTTTGTCAACAATCTACCCGTATTFTA
CAAAGGTTTAAAAATCTGATAATAGATTTTACTTGGACTATACAATGTCTCAGTGGGAGCAATAGATGGT
TTACAATGGGTCTGAAAATGTGCAAAATAGTCAAAACTGGCATTGCAACAATTCATTTCCAAAAACACAC
TAGACTCGTGAGTTTGTGGTTTTAAGTTTATATAGCTTGCTTCTGGTGTAAACGTTCTCCACACCTAAG
GTGCCAACATGCATGGCTACTCTTTGTCCCCAGAGAAACATTGCTAATTTGTACCAAAATTTCAATGATGT
GTCAGCAAACTGTCATTTTGAATGATAGTAAGCACGCCTTCAACAACAGCTCTTTATTTCTGTCAAAA
CCTTTGGGCGCACCAATCTGACCTTTATCACACTCTCAGTACCTTTTCAATTCATTATTAGCTTGTGCTTC
TGGGGCCCCGGGAATTGTCAACTATGGTCAAATAATGGAGCAAAATAGCAAGAAGAACTTGGCTTTCTCT
ATATCATTCGATTTAATCTTTGCAACAACCTCTTTGAGGTGGAATTTGCCCAATTTTATAGATTCAGCTT
AAGACCTTGTATTGTCCAAGATCACACAACCACTAGGAGGTATAATGTTCAAATAAAAAATGTCTGAAAA
GAGCTGGGTGTGGTGGGTCTGCTGTAATCCAGCAGCTTGGGAGGCTGAGGTGGGGGGATCACCTGAG
GTCAGGAGTTTGAACACAGCTGGGCAACATGGCGAAACCCCGCTCTACTAAAAATACAAAAATTAGCT
GGGTGTGGTGGTGCATACATGTAATCCAGCTACTTGGGAGACTGAGGCACGAGAATTGAATGAACCTGT
TGAGGCAGAGGTTGAGTGAGCTGAAATCGCACCCTGCACTCCAGCCAGGCGGAGAGTGAGACTCCA
TCTCAAAAAAATAAAAAAATACTGGAAGAGATAGATTACTTGGCTCAATCATAGTAAAAAAGTGT
CAGTTAAACTGCATGGAGAGATACTATTTTGAAGAGCATCAAAAAGTTGGAAGATCCATCATATTGTGA
AGGCTATGGGAGTTTAAATGTACAGGCGTTATGAAGGCATTGGTTACATCTACCAAAATTAACACCGC
ACATATTTACTCATGTGCAAAATGACTTATGTACAAATTTACTAATTTGTAGCATTGTTGATAATTGTAAA
ATATTAGGAACACACCTAATTTGCCATTAATGGGGAAGTGGTAAATAAACTAGAATTCCTCTGTGCATGG
AATACTATGCAGTCATCAAAAATGACGAAGATGTGGCCGGGTGCGGTGGCTCACGCCCTGTAATCCAGC
TTTGGGAGGCGGAGGTGGGCGGATCATGAGGTGAGGAGATCAAAATCATCTGGCTAACACAGTGAAACC
CCATCTCTTCTAAAAATACCAAAAAAATAACCAAAACACAAATAGCCGGGATGTTGGCGGGTGCCTGT
AGTCCAGCTACTCGGGAGGCTGAGGCAGGAGATGGCTGAACCCAGGAGGCGGAGCTTGCAGTGAGCC
GAGATTGGGCCACTGCACGCCAGCCTGGGTGACAGAGTGAGACTCCGTCTCAAAAAAATAAAAAAAGAAA
CAGAACAAAAAATAAAGAGATGTTTATTTAGTGAATAGAAAGATATCCAAGATATGTTGCTAA
TAAAAACAAAAAATAACATGGCACAATAAGGTGCATGTTACTATCTGGGTCTTTTAAAGGGGGTGT
GGAAGAAATGTGTGTGTGTTTCTTCAATATGTGTAGAATATCTCTGGAAGGAAATTTAAAAACTGGCG
ACCTCAGCTGTCTGTGAGAGGGAATAATGGTGGGTGCGAGGCTCAGAAGAGAGATCATAAGTAAAGAA
TTTGAAATATCTTTTCAAGTTTAAAGCACCAACTGCATTATATATCAAGAGTAAATAAAATACAATTTT
AAAAATGAATGGCATTGTAAGCACTTGATAGATGTTTCAAGTAAACAGCCATCAGGATTTATAGTAATT
GTGGTTTTTGGCATTAAAGTAATTTTAAAGTAATGGTTTTTGGCATTAGTTTTTAATGACAAAAACACA
ATTGTTTTTGGCACAACCAATACCTTACGCTTCTGGTGAGGCTCAGAAGAGAGATCATAAGTAAAGAA
CACTAGAAAGGATGTTTAAATATTATTTCCCTTTTAAACTGGTGGTTGTCAAAGCAGTCTGAAGGAAAA
GTCTCCAGAACCTGGTGATCATGTTTACATAGCAGTAGTTTGGAGTCAACAGAAATCATCTTACCATCAA
CCTAGCTCCGAAAGAGGCGGAGCCAATCTAGTTCCTTGGCCAACCACTTCTCTCCCAACCTATACGTTG
GGGTGATCTCCACTCAAAAGCTCTCAAGAGTATACACAATGCTACTACAGCTATTGTGAGTGAGATCTGAAG
GGAGCATAGGCTAGGACTCATGAGATTATAGTTTCAAGTCTTCTACTGTAATTCCTTTCAGCAAAAGTGAAG
AGCATGTCACTGGGTTTACAAGTGTACTGGCTACTTAGCTAGTGTAGATTACCCAAAAAAGTAACCGG
GTCTCATGGGCGAGGTTGGGAAAGTCTGTTAAGCACATAGTGAAGGATGAATCTGGGCTGATTGGAAGAAC
ATTTGTTTTGAATGAATGTAGCATTTATTTCCAAGAATAAGCATGTCCAGACTGATTGAGCAAGAGTTATA
TTTAGTTCACTGCTTCTGATGTCCATTTTGAAGAAAGCTAAACAGCATGCCAGAAGGGGTCAAAGATCAC
ATTTTGCATGAAGAAAGCCAAATGGAAATGGGACTGTTAGACTTAACTTTTGGGTATTTTACACTAGG
ACTTAGAAAGGACTTTATCTCTTTTATATTTTCTGTCTTAGCATTCAGTAGCAACAGAGTGAATTT
TTGGTATTTTGGAAATCTCTCTCCTCATTCTTCTTTGGGAAATCATTAGCCTATTTGATTGACTGCTG
TTGAATATGTTCCATGACATCCATAAGTCTAGCTTTCAGGCTTTCAGGCTTGTGCTTGTATTATACATATGATT
AATTGCTTACATAAGAACAATGATGATCCCTGCAGGGGAGGAGGGATGTGAAGAACAACTTACTTAGGC
ATTCCAGGGGCTAACAAAGGATGGTTTGATACAGCTCATCTTGTGTTTGAATCTTCATGCCTCTTGAGAA
AGAAAGGAGCAGAATATGCTTTGCATGGCGCTATGTCTCCAGGCTCTATGTTTTCTTTTTTGTATTTT
ATCAGTTCTCTACGTAAGGATTTGTTTTCTTCTGGATTATGTTTACAAAAACCTACTGACAAGTGTCTACAAA
TGAGGTGGGAAAGGAAATTAATCAGATGCATTCTTATAAAGTGCAGACTTAAATTAAGACCTTGAGCAAA
CTGGCATTTTGTGATGCTTGAAGATTGAGTGGGTGGGACAGTTGTACATCTTGAACCTCTGGGTACACTGCC
GAAAGCGAGGCTGAGAAGGCTGTGTTGAGGAAGGAGTGTGAGTACTGAGCCTGTTGGAAGGGAGGCT
GAGAGAGATGAGGACACATACGTAAGGAGAACACATTGGCTGGCCAGGTGTTTTTTTTCTGTGCTGGG
TTTTGATTAGAATCTGGGTCTCATTAAAGTGACCATGTTGAATAGAGATTGGATAGGGCTGGCTTGGAA
AGCCCTCAGTGAAGAGATGAATCGACAGCATGATAAGGAAGTAGATGCAAAATTCAGGACAGGAAATGGA
GAAGGCGAGGCTGAGAAAGGGAACAAATTTACAATTTGTGCCATTAGCCATTTATTAGAATTTGGTATA
AGAATTTGTGAATTTATTTGTTTTCTTCTGGATTATGTTTACAAAAACCTACTGACAAGTGTCTACAAA
TGATGTCTTTATTTCAATTTATCAACCAAAAGTTTTTACACTAAATTTCTTTTGTGAGTCTTTGAATGTTTATGTT
ATTTCCAATAATCTTTCCAGTTCTTTTAAAGGCTGATTTTGAAGGCTAGCACTTTTGTATCACAGA
ATAGTTTCCCAATGAGTATGATAGCTTCAATATCTTTCAAATTAGATTCTTTTGGAAATGAACGTGTGT
CAAATCAAATAAAACAAGTAGGTTTTTGTGCTGTTATTTGTTGAAGGTATTATTTGCAAGTTTGTACAA
TTTAGCAGATATAGGAAGGTCTAATTTTTTCTTTAGCTAGAATGTTTCAATTTACAGATATA

FIGURE 1, page 32 of 93

33/139

AGCATGAGACCTAAATGAACCTCTCTTCTGATGAGTAATGAATGGAAGGTAGATTACTCATTCTTCTCATGT
TCAAAAAACAAATTTATGTCTCTGAACACAGTTGTTTCAATGTTTTAACTTATGTTCTCAAGCTCTTCCC
ATTTCTTTATCAGTGATTTGGGAATGTGAAGGCAGTCTTGTGTAGTTTCCAAAGATTTAGGCATTTTTTG
AGACTCTAAGAATAAGTTTATTAAGCCACCAATTAGTCCCTTAATTTTATTTAAGCTGAGCAAGCAAGGCC
CACACTAAAAGTCAGAAGAATGCGGCATCTACCCAGAGAGGCTGAGGGTGGGATAGAAAAGAGGAGCAC
TCCAAGTTTGGAGACACAGATTCTATCCAGTTCCCTCAAGCTGCATGACCTTCAGCAAGTCTCCTGTGTT
GTTCAAGACCCAGTTTCTTTATAAGTGCATGAAGAGTTTGGACTCAACAACCTTATAAAGAAAACATTCA
TTCTAATTTGTCTATTGTGTGAAAAGAATGTGAGTTGTTCTAGAAAAATATGAATCTGCTCCCAATTGTCC
TCCAAGCTCTGTTCTAAATTTTCAGTTATTATAGTTACTTCTTTCGAGGTAAATCATTGAGGAAGTCAGT
TAATGCAGAGATGATGCTGGAAGGAGTTTACAAGTTCATTGTTCAAATAGTATTTGTTGGGGGCCAACT
ACAACCTACACATCAGGGATTGTGCTCACATTGGACTAGTGTCTTTTGAAAACAGAGTCTTGTGTGCCCT
TTTTGAATTTACAGGCCAACTTGGGGAAGCAGAGAGACAAATAGGAAATCCAACAGCATGATAAGTAGTA
TAATGAGATGTTTAGGGAGATACGAGCATTTATAGGAGTAGCACTCAATAGGAAATCAAGGAAGGCTTC
CTGCTGGCTATGATGTCTCAAGGGAGACTTGAAGCATGAGTAGGAGTATGTCAGATGAAAAGGGATGGGA
GGAAGATTTCAAGGTAGGGTAATTTGCATACGTGAATATTTAGACCCAGAGAAAGTCCAGAGGGACTGAGG
AACTTAAAGAAATCCAGTATGGGAGGAGCATAGTACCTGTTGGGAGGGTGGGGACTCTTGATAAATGA
GGATAGTAATTTCAAGTTCTTGGCTCTTGAGTTACTTTTGGACAAGTTGAGCTTCAAGTAGCTAGTACAT
AGGAGGAGCTTAATAAATATTTATGAATGAATGAACATGTAAGTAAAAATGCTAATAGGTACCTGGCA
AAGTGGACTTCCTAGTCAGGAAAGAGAGGTTGGTTGGAGATTTCTATTTTGAATTTTCAATGTATATAT
GAAAGTAAAAACACAAGGAGTGGTTGTGATCATCCAGGAGAAGGTATGCAGAGGAGGGAAGAGGGTCTAG
GGGCTGAATCTCTGGGTTACCCACACCTTGAGAGGAGGAGAGGAAGAGGGGCTCTCAGAAGAGCCTGAGCA
GGAAGGGCCATTGTAATAGGACTAAACACTAAAGCCCTGAAGTCAGCTCTCTGGGGGCAGAGGTTTTGT
TCTGTTTTATTTGGGATGCTGCTGTTGACCAGATTATGCTCCCTACCCACCAATTCACATATTGAA
GCCCTAACACTCAATGTGACTGTATCTGGAGATAGGGTCTTTGGGAGGTAATTATGGTAAATGATGTTT
TAAGGCTGGGACCTCACTCTGATAGGACTGTGGCCTTATAAAAAGAGCTCTCTCTTTTCTGTCTCTCTC
CTTCTACCTCTCTCAGGACCCACCCCAACCCACACTGAGAAAATAAATCGCTGTTGTTTAAATCACCCA
GTCTATGTTATTTTGTACAGTAGCTGAGCTGACCAAAACAGTTCTCCGCACTTAGAAATGGTCTCTGGT
AAATACAGCTAATCAATATTTTTTGAAGTGAATGAATGAATGAGTCATTCACTGGCATGCTTATAAATG
CATTACTCCCTCCACAGTGTGATGTGCTATTGAGCAGGTTGGGAGAAGGGAGGAGCTCTCGCAAAACATGGA
AGTCTGGGTGCTTAGGGAGAATGGGAAGGTGCCGTGGTCACAAAATCGGAAGAAAGAGCTGAAAGGCTG
AAAGGCTGAAAATGCTAAACTGCTCAATCTCCTCTGTCTTTTTTAAAAAAAATCATTGGCTAGGCTG
GCTCTGAAATTTGGGGATGGTTCTTGGTTGATTATGTGGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTG
TAAAGCCCTTCTTAACATTAGATAGGACTATCTGAATCTAAGTGAATTTAGGCACAATCTAGATATTGC
TCTTCAAGTAATAATTAATCTAAGCTGGCAATGAAATTCCTCAAGTAAACAACAGATAAAGGGAAGGA
GAGGGACACAGTGAACAATAATTGGAATAATTGGAATTTCTGTATCACTCATGGCACTTACAGTGAAG
TACTTTCTACATTGTCTTCTATTACATGCAACATAGGTACATTATATAAAGATCCTAAATATTTGTTA
AAAGAAATTTCCAGAAAATGTAAGATAAAAGTTACTAAATCTATTAGCTTGAAGTAAATCCAAA
TCATTCTATTGACTCAATAATCAAGAACAGTCATGCTGCCTGACAACCAAAAATTCAACTGTCTTCATCA
AGTCTGGGTGGGAAGCCAGGAATGGGATCTGAGATCAGAGGCTTGTGAGAGTCAGGGTCTTTGGCGT
GATTCTTGGTCAAAATCATGCATTTTTTTCCTTGGAGAGATAGTGGGAAAGAAAAGGCTGTTAAAAAC
ATGTTAAAGAATACTGATTCCATTGACTTCTTGTATGTGTACCCTTGACAGACTTGGGTAAACCTTGA
TCATGTTAAAGCCATTGTACTTAAAGATTCATGACTAGAGTGTAGGACAATTCGTGGCCTTGGGGGT
CCCATTGCGAGCAAGAAGAGTCTGACTGAGAAGAGGATAGCTCCGCTCCTTGTATGCCTAGTAACCTGCATG
CCCAGCACTTTGCTGGCTGGGCCATTGGTAGGAAATGCGGTACATGCACCTCAATCTGTAAGAGATCATG
GTCCATAGAGATCATAGATTTATTTTGCCACCTGGCCAGATGGTGATAGAAGTCAGGACAATGGTTGCC
TAGAGGGGTGGGAGTTTATTAGAATGGGACACAAGGGAAATTTCTGGGGTGATGGAAATACTCTATAC
TTTCATTGGGATGATTGTTTACATGGACATATCCATCTGTCAAATTCATCAATGGTATGCTTTAGATACA
TGTATTTCAATTGTATATAAATTTGCCCTAAGAAACAAAACTCAAGGTCAGGTGAAAAAGTCCAGGAG
CTAATCAAAAACCTTAAATAAGTGACCAACATTTTGTGAAAATGAGCAGAACTTAAAGGGAATTC
TTTGTATTTTCCCAATTAGAGGAAAATGATGGTATCAGATAAATGCTCAAAAATAAGCTTCCAAAACA
GAGCATTTATAATCAGTACAATAAATAGTTTGAACACAGACAAACCTTCATGCTCAGAGTGAAGGAAC
ATTTCTAGTAGTATAAGCTATTACGGAGATAGTCCACATTTATTTCTTTTCTATGTTTCTTTTGGAGGAA
TAATGTTTTGTAAATGTAATATGCTTTAATGGAGCTAGAGAAGAAGCTATGTTGGTCATAGTATTAT
CTGCTTGCGAACTAAAAATTCAGAGCTCTCTTGTGAATCATGCTGCCAAGAATTGCAGACTTAAGCCTCA
AGATTGTAGCAATTTAAATTTTGACTTTATGGCCTCAGTTGGCATGAAGATACAAAGATAATCTTCTAGC
AAAAACAGTTTGAAGACCGGGCGTGATGGCTCATGCCATAATCCCAGCACTTTGGGAGGTTGAGGCA
GGTGGATCACCTGTGGTCAGGAGTTTCAAGACAGCCTGGCCAACATGGTGAAATCCTGTCTCAACTAAC
ATACAAAAAATTAGCTGGGTGTGGTGGCGGACACCTGTAATCCCAGCTACTTAGGGAGGCTGAGGCAGG
AGAATCCGCTGAACCCAGGAGGAGAGGTTGCACTGAGCCGAGATCACACCACTGTACTCCAGCCTGGGT
GACAAAAGTGAACCTCTGTCTCAAAAAAATAAATGGTGAATGTACATGGAAAGTTAACTTTTAG
AGATAGTAATCCAGACACCTATAATATTACATTGTCCCTTTAAGTATCTATATCAATAAATTAACCAACA
TTTGTGACTTAACATGGCCAGGACAGTGTGGGTTCTCATAATCCCAAGTAATTCAGCCAGACCTT
GTCTCAAGGAGCTTATGAGCAGCATGAGGAGATAAAAAACAGATAAATAACTCTAATTCAGGAAGAATT
TGATAAATGCATGATACTACTACTAGAAATTCAGAGGAGAGGAAATTTCTTTGAATAGAGACTAAAGGA
AGGAATTAATGAATGTGTAGCATTGGGCTGGACCTATTACAAGAGGCATGCTTTCCCTGACAAGCCAA
GAAAGTGGGGATTAAAGGTAGAAGAAAAGAAAAGCCTTGAGTTCTTGGAGTATTAATTTTGTGCTGGCT
GAAGCATAGGTTACAGTCCGAGGAGATGGACTAGGAAGGATCGTTATGGGCAGAGAGGAAGCCCTGAAC
CATGGGGGAAGCTATGATTTGGTTAAAGACAGAGCTGGGTCATGTCAGATGGATCCTGAAGCAGTAA
AAAAATCCAAGAAAGTAAACAGGTTGACGGTTTAGGATGAAGTCCGGGAGGAAAGGGCAGAGTGGTCC
TTAGGAGGCCGTTAGGACAGGTAAGGTAATGGGTCTCAAAGGAGTGGCCGAATGCAATGGAAAAAGAG
AGATTGTAAGCTAGAAGGCTTAGGAATGCTCTTGTATAGGTGTGGAAGGCAAGGGAAAATCAGCCCT
CGAAGAAGACAGTGAGATTTAATCTGGGTGGCTGGAGAGACAGTGATGCTGGCACAGACACGGGAAGTT

FIGURE 1, page 33 of 93

34/139

GAGAGGAACACCATGTTTGAAGATGGTACTCATATTTGAACAAGCCTGCAATGCCAGCAGACCGCTGG
AAAAGTGGGGCTGGAGACACATTCAACGGAGGAGCCAGATCAATCTTACCTTCTTCACCTGAGAGAGC
CAGTAAGTCACGGCTGGACCGTGTGTGTCCAGCAGGAGAGGGTAGGGAGGGAAGCCAGAGAGCTGGGAG
CCCAAGAGTGAAGTTTGGCCAAAGGCAGAAAGAGGAAAGTCGGCGTAGCACAGTATACTTTCCACCCAT
GCTCACCAAGCCAGGACAAAGGCTCACCAAGATGAGTTTGAAGAGAATGCTGGAGAGAAAGTGGTTAA
GAAAAC TGCCCTTACTGAACTTCTGGGCTAACCTTGATTGTAAGTCTCTGAACAATCAAAGCCTGTGAG
GAGACAGCCAACCTTCTTATTCTCTCTATGTCAATAGTGAACAATGTCAGATCCCCCTTCTCTTCTCTCT
CCTTTCCTCTGTCT
GGTGGCCATTGTTGACCTACAGGAGGCACCACTGTCAACAAACAAAGGGTACAGCTTTCTTTTCAATAT
TTATTTATATCCAGTATTTATTTTCAATACTGACTATGGAGAGAGCTCTCTGTGCTCAAACTGCAAT
ACTGGGGGTCTTTCAAAGCACAACAAACATATATTGTCATGATGGCATCATTAACATTTTATGGCTTCT
ATTTCTTTTGTACTGGTCTCAAGAGCCACTATAAATCTCTCAGTAAGTGCATAGTGTCCAGGGCCA
GAGACCGGCCTCTCTGGCATTGTGATTAGAGTCATTTAATATCCAAGGTGGTGACTAATGTCTGGCAAC
AAAGCCTCCATTGGGTGTCTGTCTCTGGGACCTGAGCGTGGGCACTCTAGGAGCACCTCAGTATTGC
GTGTTAGTACTATGGCCGAGAGAAATAGTTGAGAAAGTGGTCAAGAGGTGGATCCATGTGAACGCCACTGG
GAAATGAGAGACCTCGTCCCAATCACGGTCAGTGAACCTCGAAAGCCTAAAATCAGTTTAAAACAAAG
TATCTACCTTTTATCTTATGTTTACAGGCTCTAGGCTTTTAAATAATACGTATTTTTCACATGTTTACAGAA
CAGTCAACTGAGCTATTTCATGGAAGGTTTGTGGGTTTGGTTAACGAAGTGGAGGAGTATTACATTTTTCAG
CTGGAACACATCCCTAGAATGCCAAACATTTATCCAAAGTCTGGTTTCTGTGCAATCGGAGGCAT
GGCAATGCCTCTGTTCAGAGACTGGGGGCTAGGGCCAGTAAGGCATTTGATCCACATGTATCCAGAGG
CTTTTATTTGTTAAATTTATTTCTTTCGGAACAAACCACTGTCTTATTTGTAACTTGATATCCATAC
ACTTTTGACTGGCATTTCTATTTTACCGTAAAGCTATGATTCACAGCAAGCCTGTTTCTCTCTGTG
GGGTGGGAGCAGAAAGCATAGGGTACTTTCCAGCCTCCAGGGTAGGGGCAAGGGGCTGGGGTTTCTCC
TCCCCAGTACAGCTTTCTCTGGCTGTGCCACACTGCTCCCTGTGAGCAGACAGCAAGTCTCCCCCTCACTC
CCCAGCTGCCATTCATCCAGCGCTGTGCAAGTCCAGCTGCGTGTCTGCCGGGAGGGGCTGCCAAGTGCC
CTGCCTACTGGCTGTCTCCGAATCCCTGCCATTCACGACACAAACACATCCACACACTCTCTCTGCCTA
GTTACACACTGAGCCACTCGCACATGCGAGCACATTCTTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCT
TTCTACAAGCCCATGGAACATTTCTGGAAGACGTTCTTGATCCAGCAGGGTAGGCTTGTTTTGATTTCT
CTCTCTGTAGCTTTAGCATTTTGAAGCAACTTACCTTTCTGGCTAGTGTCTGTATCTTAGCAGGGAG
ATGAGGATTGCTGTTCTCTCATGGGGTATGTGTGTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCT
GTGCCATTGTCATATAATTTGGCAGGTTTCACATTTTAAAGAGCCCTATGAAGTGTCTTTTGCATGTGTT
TTAAAGAGGCATTTGAAATTTGAAGTGTGATTATGGAATTAATCATCTGTAAAAAATGTCTTGGGA
AAGTAATGATTGCTGGCCATAAAGGGAATATCTGCGATGCACCTAATGTGTTTAAACCTTTATTTG
TGACATCTGTAGCTTATGCTAAGTGTAACTCGATTTTGGCTTCAGCTACATTTGTCATATTGTCCAACATG
GTCTATTTTGTAGAATTAGATAAAATGTATCTTGATATAAAATAGTCAAAATGTAACCTTTAGTAA
CAGTAAGCTTGGCATTTAGATAGACCATGAACACTTCGTGAGTACTCTGTTGGGTGTTTGGGATAGCAA
TTAAACAAAGTATTGATAGTTGTATCAGAGTCTATTAGGCTGCAGCAAGGAAGTTTATTCAAAAGTAT
AAACTACCAAGATTAAGACGATGATATATCTACCTTACCTATTTTGTCTCTTAATATGATATATATA
TAT
TAAGTTTAAATCAGTTTAAACCTTTTCTATTTGTTTTCATCTGGATATTTGATTTCTGCATATCTTA
GCCAAGTGAACCGAGAAGATCGAGTTGTAGGACTAAAGGATAGACATGCAGAAATGCATTTTAAAAATC
TGTATGCTGGAACGAGACCGACAAATGTAACATAATTGCCAAAGCTTTGGTTCGTGACCTGAGGTTATGTT
GGTATGAAAAGGTCACATTTTATATTCAGTTTTCTGAAGTTTGGTTGCATAACCAACCTGTGGGAAGGCA
TGAACACCCATGTGCGCCCTAACCAAGGTTTCTGAAATCATCTTTCACATGAGAATTCCTAATGGGAC
CAAGTACAGTACTGTGGTCCAACATAAACACACAAGTCAGGCTGAGAGAATCTCAGAAGGTTGTGGAAGG
GTCTATCTATTTGGGAGCATTTTGCAGAGGAAGAACTGAGTCTTGGCAGGTTGCATTCTCTGATGG
CAAAATGCAGCTCTTCTATATGTATACCTGAATCTCGCCCCCTTCCCTCAGATGCCCCCTGTCACT
TCCCCAGCTGTAAATATAGCTGTCTGTGGCTGGCTGCGTATGCAACCGCACACCCCATTTCTATCTGCC
CTATCTCGGTTACAGTGTAGTCTCTCCAGGGTCATCTATGTACACACTACGTATTTCTAGCCAACGAG
GAGGGGGAATCAACAGAAAGAGAGACAAACAGAGATATATCGGAGTCTGGCACGGGGCACATAAGGCAG
CACATTAGAGAAAGCCGGCCCTGGATCCGCTTTTTCGCGTTTATTTTAAAGCCAGTCTTCTCTGGGCC
CTTTAGCAGATCTCTGTCGCCCCCGCCCCCTGGCCGTGAACTCAGCTCTATCCAGCAGCGACGACAA
GTAAAGTAAAGTTCAAGGAAGCTGCTCTTTGGGATCGCTCAAATCGAGTTGTGCTGGAGTGATGTTTA
AGCCAATGTCAAGGCAAGGCAACAGTCCCTGGCCGCTCCAGCACCTTTGTAATGCATATGAGCTCGGG
AGACCACTACTTAAAGTTGGAGGCCCGGAGCCAGGAGCTGGCGGAGGGGCTTCGTCTGGGAGCTGCA
CTTGCTCCGTCGGGTCGCCGGCTTACCGGACCGCAGGCTCCCGGGGAGGGGCGGGGCCAGAGCTCGCG
TGTGCGCGGGACATGCGCTGCGTCCCTTAACCTCGGCTGTGCTCTTTTCCAGGTGGCCCGCGGTT
TCTGAGCCTTCTGCCCTGCGGGGACACGGTCTGCACCTGCCCGCGGCCAGGACCATGACCATGACCTT
CCACCAAGAGCATCCGGGATGGCCCTACTGCATCAGATCCAAGGGAACGAGCTGGAGCCCTGAACCGT
CCGCAGCTCAAGATCCCTTGGAGCGGCCCTTGGGCGAGGTGTACCTGGACAGCAGCAAGCCCGCGCTGT
ACAATACCCCGAGGGCGCGCCTACGAGTTCAACGCCGCGCGCGCCCAACGCGCAGGTCTACGGTCA
GACCGGCTCCCTACGGCCCGGGTCTGAGGCTGCGGCGTTGCGCTCCAACGGCTTGGGGGTTTCCCT
CCACTCAACAGCGTCTCTCCAGCCCGCTGATGCTACTGCACCGCCGCGCAGCTGTCTGCTTTCTCTG
AGCCCCAGGGCAGCAGGTGCCCTACTACCTGGAGAACGAGCCAGCGGCTACAGGTGCGCGAGGCCG
CCCGCGGCATTTCTACAGGTACCGCGCCCGCGCCCGCTGCGGGTGGCCCGCGCCCGGCGAGGAGG
AGGGAGGGAGGGAGGAGAGAGGAGAGCCTAGGGAGCTGCGGGAGCCGCGGGAGCGCGACCCGAGGGT
CGCGAGGGAGCCCGGGGCGCGCGCCAGCCCGGGGTTCTGCGTGACCCCGCGCTGCGTTTCAGAGT
AAGTTCTCTCGCCGGGAGCTGAAAAAACGTAATCTTCCACCACTTACCGTCCGTGCGAGAGGCGAGC
CGAAAGCCCGGGCTTCTTAACAAAACACAGTTGGAACCAAGCAAAAGCAGCAGTTATTTGTGGGGGAA
AACACCTCCAGGCAATAAACACGGGGCGCTTGAAGTCACTTGGGAAGGTCTCGCTCTTGGCATTTAAG
TTGGGGGTGTTGAGTTAGCAGAGCTCAGCAGATTTTATTTATCTTTTAAATGTTTTGTTAATGTG
CTCCCCAAATTTCTTATCTAGACTATTTGATTGGAATATGTGAGCTATGATGACTTTCTGGGA

FIGURE 1, page 34 of 93

35/139

AGCGATTCTGTACCCCGCTTTCCCTCCTCCCCACCCACGTCCTGGGGCTTTAGAGAGCGATTGGGAG
TTGAATGGGTCTGATTTTCGGAGTTAGCTGGCTGAGTCCGCGCTGGAGCGGATTGCTGGCATGTGACTTCT
GACAGCCGGAATTTGTAGGTGTCCCGCGAGTTTAAACAAGCCATATGGAAGCACAAAGTGCTTAAAAAT
AATCTCCTGCCAGCCAGTGAACAGCTGTCCACCCGGGGAGAATGCCCGGAGTGGCGTGGGGTTCAG
CCAGGGTCTGCGCCTCGCAGCCACTGTGGAAGGAGCGCGCGGTCCAGGACACAGGAGACCATTGTTG
ACTTCAATGGCGAAGGTTGTGTCTCATTTTAATTTTTTCCCTACAAGAATTGTTCTTCTCCCTCT
CCTCTCCCTCCCATTTTCTCTGCCCAGTTTCTCCTTTTGTTTTTTGTTCCTGATGGGCT
GCAGAGGGATTAGGTGGGCGCTTCTGGTGAACACCTTCCTAGGTGGCCACAGGACAGGTGTACCCCGGAC
TGGGTTTGGAGCTTCAGGGCGCCACATGGCTGGGTCCCTGAATTAGGCATTTCCCACTGTACACTGGTA
TCCGACTGGTGTCCCTATATCTTTCTGCCCTGTAGCCGTGGACCAGTTTTTGTTCAGTATTCTGTTTC
CAGGGATATTTATAGCAGAAGGAAGGGGACTAAAGTGCAGTTTGGCCCCAGAGGATACTGAAGGGCAGAT
TCTGGGGGATTCTAGTGTGCATCTTCAGCCGCTTGGAGAAATTTAGAGCATCCACAGCCACGCAGATC
CAAGCTGTCTTTACTCAAAAGACAAACAATGAACAAGACTTTTAAAGGTTGGCATATTTCAAAATTAATTT
TACTTGTTTTAATTTAGGGTTAAACAGAGAAAAAGGATTTCTTCTGCCACCTTTTTTTTTTTAAATGG
AAGAACAAGTACAGCGATTAAAGTCTAATTCACACAACATTTAAACTGCTTGATGTGAAGGAAGGCAC
TGGTATGATGTGAATTCATAACCTTATGATGGACTCCAGAAACCATTTCCTCCCTATTTAATTTTCAG
TTCTTTTATGTCAAAATTAATGCTGCTGAATTTCAATGGGCACTAATGAGACTGCTCCTTGGTAGATTATT
TACTGCCTTGCTAATAATTACAAAGTGAACCTGGTCAAAATACAGAGGGGATCGCATCTTATTCAAAATTTG
TTTCATCATCCCACTGATAAGTGGTATCAGTGAATATGCCCTATCTTACACTTTCTGCATTACATGATAT
TCAAACTCTTTAGAAATAAAAAAGAGACAAGGAACCTAAAAATTAAAAAAAACTTGCACAAATG
GGACTCTGTGTGGAATTTAGATGATTTTCTGTGTTTTATTTCCCGGATTATCTTCTCTCT
TTTGTAGAAATTCGCTGTTATTATCCAGCAAGGAAAGAACATCTATGCAAGTTCTTCATATGGACA
GATATTATTTAGTATTTTTCCCTCTCAGTTTTTCTGCTTAAATGACTCTGGGTATAAAGGAAAGGATTG
ATTGGGCTCTTTTAGGAACTTTAAGTTTCTTAAAGTAGTTCTCAAAAGTTTGGGGCTGAAAGCAGTGTT
TTCAAACTGCTTGTACACCCAGAGGGTCTGAACCTCAGTTTAGTGAGTCTAGAATATTTTTTAAAGG
ACTAAAAATGGAAGGAATATAATAGAAATATCAGAGTGCATGGTATTTTCGTAAGGATAAGTTTGTGTTT
CTGAAAATCTGTTTTAATTATATGTGCTTCTGTGTGCTGATTGTGATGTAATATGTTTCTTACTGTGG
ATTGAATTCAAAGAAAAATTAGAAAGCTAATGGCTTAAATATTTATATGTTTCAAGTAAACAAAAAT
TCAGGCAAGTGGCTGGTTGTTTTACCTATACAAATCAAAAGGCTATTTTGATTGTCTTCAATTTCCCT
TATAAATTAGGTTGGTGTCTTTAGTCAATTTAGGCTAAGTTTACTATCTGATTCTTAACTTTCTATTGT
AGAATGGTGTCTGTCATGTGACTGTCTCCCGAATGTCCCACTGGATGTTTCAAGAAATTTATGTGAAGGT
CACGTCAATTTAGCATTGAGATGCTGTGGTACCTTCTTCCATTTCTTCCATAATATGCAGCCACATCTAT
GTGTGAAGAAATGTAATAGATAAAATTTCTCTGGACGCATAAATGTGAGAAAGATTGTACATGTCCC
AGCAAAATTTAGTTATTAATAAATTTGTTACTTGGCAAGCTGAGATTTTGCAGAGTGTACTCAAAATTTT
ACAATGAAGGAACAGGGAGTCACTTATCTCTGGGTTCCCTTTTTTAGATTTCAAACTAAGTTAGGAATTTAATGC
TGCAATGCTTATTTCACTTTTATTACTCAGTATTCTTAAAGTTAGACGTCTCTCACTTCTCCAAAAAAT
TGGCAAAATGTATAAATCTTTTGCATCAAAATCAATGCCCTGCTAATTTGTATCTTGGCCATCTGCATATT
TTGGACAATAATTTTCCACTGGTGATCATTTGAACTCTTCTCAACTTTGAATAGAGACTGATTTC
AAAGTGAGATTTAAGTGACTAAGTTTCAAGTTTCCGATACATTTTCTCTTACTTAGATAACATTTTCCAG
CCCCCTTCTCTGATCTTACTTTTTTATTAATTTAAATTTGTTACTGATTACGTGACACTTTGTGCTGG
TCTAAGAAATAGTCAGAGTCACATATTCCTGGTGAATGAGCATATTTTCGGATGAAAACGGAATCACAT
CTTCAATCCCACTTTTCACTCTCCCATGTGGCTGTACCTGTTTGGAGAAAGCTCCTGAAGGA
TAATTTGCCACTTATTTCTAATCTTTCTCACACTCATTTAATTTGGATCCCTGGCTAAAGTTGTTATTACT
TTTGTGATTATCTTAGTCTATGACATTCAATTTGGGAAATTTCTCAGTTTGAAGATTTTGGCGGCT
TGGGATTTCTTTAGTTTCTTATAGTTTTAAGGATATGTAAGACAGGTGTAAGAACTGCCAAGGGGAGG
AACCATAGATATCAGGAAAACTAGAAAGATGCCAGACTTACCATTAAATGAATGATGAGACAATAGTAA
CTTTGTTAAGTGAGATTGTATATGTGAAGTGGTATAGAACTAAACAACATTAGGTGTTTTTATTATT
TTACTCATATGTTAATATTTGTTTTGGTCTTTTATAGGCTTAAAGGCTGGGAAATTAACAGATTTAAGTG
GTCAGGAATTTGTTATAAATATAGAATGATGATTATATGAAATCTTTTCTGTGAAAGTCAAAATTAAG
TAAATCTTTTACCATCTGCAACATTTGTCTGCAGCTGGCTTACCAGGTATCATAAAGAACATTTA
TTTTACAGATACATTAAGAAAGTCAAAACCTGATTATGTGTAAACAATTTTACATAAGGAAATATATG
AATTTTAAATATATTTTCTAAATCCGTACTCAGCATGAAATTAATACATCTTAACCCCTCCCTGTGAC
TTCATTATTTTAAATGTAACCTTTAGAAGAACCAGTAGAGAGAGCAGCGTGCTAAGTGTGTTCTTT
CTTTTCCAGACAACTTTGAATGGAGAGGACAAATTAGTCTTTTGGTTTAAATCTGTCTCAGTTTGGTTA
TCTAAGAAAGGAAACAGAGTGGCTACACTTGTTTAGAACCATATGCATCTCCAGAGAAAGATGCTCT
ATTAATCCAAAAATACAGCCACTTGAACACAGCCAAAGCGAAAGTGTAAAGGACTTCATGGAAAGGAGG
CAGTTACCAAAGTATTGAGGGGTTTTATATTTTAACTCCGCCAGTGAATGACGTGTAATGTCACTT
ACAAAAAAGGAAAGATGATGTCTGAGCTGTTCTGCTACTTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCT
GAAATCCAGAAATTTAAGTGGGCTGGAGGTTACGGGAAGCACCTTTTATAATATCCTTAATCTCATGAGG
AAGAAACCATAATTGCTGAATTTCTGCTTGGATAATATCAGGAGGACTCTGAAGAAAGTTTTCAGT
AATCAACAATGTTTTAATTTATGTGATATTTTTAGATCACCTCAAAATATAGGAAGCACAGAAATGAC
AACTATCTGGTCTCACTGACACAATTTATGTAGTTTAAATAAGTAATTTCAAGAAACGTGGGCA
AATAAGAAAGATGACTTTCTTACAACCCGCTTGAAGTGATGTGGTGGTGGTAAATGATCCATGATTT
TGATGATGACGATGATGATAAATGAAGTTTTGTCTCAGTTTGGGTAGGTGGTATTCTGGATGCCCTC
CTATGGACCTGGAGATGTTTCTCTATACAGAAATCCAACTCTTAAATCTACTTGGCTCATTGTTTTA
GAATTTCAATTCATAGTCTGAAAATTTAATAATGATATTACCAATAATATTAGAACTTATTAAAGTAC
CTATAATGCTATACAAAAAATTTAAAGAACCCAAATTTCAAGCAAGACTGAAAATTTTTGTCTCTC
CTCTGAACTATTAGAGGGACAAATAGTTTGTCTTATAATATCTACTTTAAATAAATGTGCCATCTTT
AATAAGATAGTAGACTCTTTGTTTGGTAATGTTCTATTTTTTGGAGATCCTATGAGTTTCACTTGGGAA
AATTATAAAGTTCACCTAAAGTTAATAAATCCATTAAAGTAATGTTTCAAGAACTAGACATTTCCAAATGA
GCCCTTGAAGGCTCAGGTGGGTTTTTGTAGAGTTCCCAATGTTTCAACCCAGGAGGAATGGA

FIGURE 1, page 35 of 93

36/139

GACCTCTGCAGTTTTGTTATTTCAGATTCTCATCTCCTTCTCAGAAGCCGTAGAACTGGCCGGGCCCTAAG
GTCCACGCTCCTTGGTTCCAGTTCTGTCTTCCATCCTTCGGTCCCGGGCTCATTTCTGCTGTCTCTAAAC
GGTGGCAAGTTAGGGGCCCCAGCAGCAACTGTGCTTACCTGGCACTACTTCTGGGCAGTTTTCTTGG
CTCCTTGACTTGTGGGCGGCTTGGGATTTCTTTATGGCCCTGAAAGCAAAAGACAATGTTCTCTTTTA
GTTTCTGCAATTAATGATGTTAGAAATAGTCATCTTACATTGGCGTACTTCTCTTTCTTCTGTAGG
TCTTTTAGAATTTTGGAGTCCATTCTCATATTTCTTGTTCATTTGCTTTATTTCTAATACATAGAAGT
TTAACTCCCTTTAAAGAGTTTTTGGCCTCTTTACCCTATTAAGCTTTCTTTTTCTTTCTGTTTTAG
TTGTTCCATCTGTGATTCTCAGATATTTTCTTTTACCTTTCTGGTTTATTTCTTTATTGACCTGTCT
CATCTGTTATTTTAAAGAAATTTGGAACAGGGCTAAACAGAGTTCTTACCTCAGCCAGTATAAGAATATA
CCGTAATAACTCAGAGTGGTATTAACTAGATTAAAAGTTTCAAAAAGTGATGTTTTCTTGTCTCTGAGG
ATAGAACTTCAACAAAATAAAGAAGAAATTTCAATTAGTAGAATTTCTTTGAAAGTTTGTTCATTCAT
TCATTTGGCTACCTTATTCCAAATTTGAGTCATTCATTGAGGGCTTAGACTATATAAAGTGTGGTTTTGTT
TTCCAGCAGTTTATGCAACAGCATTGCACCTAGCAGCTGGGAAGTCTTATAGCATGAATAGGTGAGATT
CTAATACCAGAATCTCTGCTGTGTAACTAACAGTGTAGTCTTGACTGTTGTCTCCAGTAACTTGG
TTTCAGGAGTTTTAGATCCATGTGAACGTGTACAAGGCATTTTGTAACTGTAACCTCCCACTTAATCA
ACAAAACAAAAAAGCTCATTCTGAACATTCAGTGCATTCATGATTAATCTTAATTACACCACAAAGGT
ATTTTCAATGGTGATTTTGGGGAGTGGGTAAACAGTTTCGAAAGCAACATTGTGAGAAACATAGTTGA
TTTTAAAGTTCTTCTGGTGACTTTGACTTCTGCTTTTTTAGAAGACCTTACACAGAGTTGTATTTATT
TCTCTGGAAATATTCAAGCAATTCAGAGTGAAAGGTATACATTCCAATTTGCGTATGAGATAAAATTT
AGTTACATTGAGAAGCTATTTCTTTAGTTACAGGGAAAAATTTGAGGGCTTTTGAAGCCTCTTTGAT
TCTTAATGAGGATCCCTGAGCAGTGGTCCAAACAGAAATCATCTCTTCTTCTTCTGCTGATTTCCCT
CAAGCTCTTAGCAAGTGATGGCAGCTGAAAGCCCGGAGAAGCTGTTGGTTGAAAGAATGGATGGTGGT
GGGCAGGAAGCATCAGGGACATGGTTTGGCTTCAGTCTATTGGCTGGGAGAAAGGCCATTTAGGAAGGGAT
CCTTAGATGCCACTGGAAGAATGTGGGAAGTTGTGAATCTCTTCTCTCAGGAACAAAAGTAGAAAAAG
GACTCCACACAGCAATCCAGTACAGTCCGGCCCTCATTTATTGATGGATTCTGTATTGCAAAATTCGCTGA
CTTACTGACGTTTATTTGTAACCTTCGAGTCAACACTCACGGTGCTTTCTCAGTCTTTGCAGACGTGTG
GAATGGCAAAAAATTTGAGTTATATGACGTATATGTTCCAGCTGAGGCTGAGCAAGGCTCACTTCTCC
TTGCAGCCCTCAGACTATAAAAGTGTCCCTCTTGTCTATCTACTTCTGTTTATGATTTTGCATTTTCA
TAATCCCTGTTGATTTTGTCTGTTTAAATGGCCCTTAAGCATGGTCTGAAAGTACTGTCTAGGGATT
CTAAGACAAGGCTCTGACGTGTCTTAAGAGAAAATACGTGTTGATAAGCTTTATTCAGGCATGAGTTAC
AATGCTGTTGGCCATGAGTTCAATGATGGTGAATCAACAGGATATATTAAATACAGTGTGTTTGAACAGA
AAAACATATAAAACAAGGTTATGTATTAATGAGTTGGCAAAATGCTGTGACCAAGGCTCCAGGAACC
TACCTTATTTTCCCTCAATGCAATGGTTTCAGTATTGCTAATTCAGTGTGAGGTGACTTTATAGAAC
ATGAGTACCATGAATAATGAGAATCGATTCTGTATAATAGAGTGTGAAAGCACAGGCTCTGGGAGCCAGC
AGCTATATTCTATTCTGGCGTACTCCTGTGTAGTTGTCTCATCACTGGCAAAATGCTTAACTGTGTGCTC
CAGTTTCTTAATCTGTAAGGCTACATCGTTTGGATGATGTGAGGATTAACAAATTCATAGATGTCTAG
GGCTTATAACATTCCTGGCACATAACAAGTCAATTTTATTTTACTACTTCGGAAGGGAATTGAGTACT
ATACCTGAAAGAGGATGGATGGAATTTCTACGGGTCTGGAATGTCCCTATATTGTTTATTTTGGC
TTCAAGTGACTAACTTTAATACCCTATTGTGATTAGAAGTTAACTTCTGCAACCAAAAGGAAGCAGGAA
GCTAGTATTCTTGAAGTGCTTATTACATGCCAGGTAAGTGTCTACAAAAACAAAACAACTGTAA
AAAAAATTCAAATTTGGCTGCGTGACGTGCTCATGCTGCTATCCAGCACTTTGAGGAAGTGAAGGG
AGGATTGGTTGAGTCCAGGAGTTCCAGACAGCCTGGGCAACACAGTGAAGCCTGTCTCTACAAAAA
CAAAAACAAAAACAAAGGCACTCCAAATCAGTAAAAATTAATCAATCAATAAAAAGAGTGAAGGGCATT
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TATGATGTACAGAGGGCAAGGAAGGAATTTTCTGTAATTTGGAAGAAATGGGAAGTGTGAGAAAGAGGA
GTTGGAAGCTGAGATTAGGGAGCATCTACAAGGACGTCTTTTTCAGTTGGTTGGAATATCCAAATCAA
GGATTATTTTCAAGTACCCAGATGATTAAAAAAGTACTGAGATCCAGGTTGATTTCAGCAGTTCTGAC
AATGCTCTGGGTGCAAGCTTGAATCAGTAGTTAAGAAAAACAACAACAAACAAATTTTGGGGCTTTT
CTCATGATTTACAGTTAAAGCTCATTACTCTTCTATGACTTTAGATGGAGGATATTTCAGTCTTC
AGGATGGAGACATGAGGGGAAGTGAAGTGTGCTCAAGGTTTGTGTTCTTAACCATGAG
GAGCACTATTCAAAACCCAGGTCTGTAGATTCCAGTCTTCATTCTCTGGGCTCTTGGATTTCAGAA
GCAGAGGGTAAAGGAGTGTGGGGAGAAAGATCACAGTAGCTTTCAATTCCTACTCCTCAGCTTTCCAAA
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GATGCAGATTTTGTATACCAGATATGAAGATAACATTAGGAAGCAATCTAAAACATGGACACAAACACAC
ACCTGTGCCAGTTAGCCTGTATAATTCGATTTTGTAAAGTGTGTTAGATAACTGAAGGTAAATTAAGCCC
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AGTGGTACACATAACCTCTAGCATTGTTGATACAGCTATAAAATCCCAATATCAGTACAATGTTGATT
GCATAAAATTTCCAGTTGCATGGTTGGAAGTCTCTGAAGTTTGAATCCTTAAACAGTCTTAAATGTGG
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AATACTGTTTTTAATGCTTCCCCAGTCCAATTTTGGCTGTAGAAGACGAATTTATGGATGAGGGAAGTG
GCATTACAGCACTCCAGCTTGGTATAGAAGCCCATGGTGTCTGGTCTCAGTCTCAGCCCGCTCATTT
CCTCATGTGAACCTCAGAATAAGCAGCTGAAAGCAAGTCTTCAAAATCTCAGAGATATGTATAAATGCAAG
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ACACAATGAGGGATTATCAACCCCTGTCCAGGGCTCTCTGGGTCTTGGTTCTTTGTTTTGATGCTCAG
CAATTGTGATCAGTGAAACCAATGTTGCTTTTCTATCAAGAGTCCAACCTTTTCTAAGAAGGTTGTTG
TTGATATTAGGGAATAGCTAGCAAGTTATCAAGTAACTTGTAGAAACATTTCTTTGCAAGAGTTCTTAT
ACTGAATCTGTAGTTGACAGCAGTGCAGTACTGGTCATTTTCTAGGACATCTTAAACACTGATGAG
AAGTTTCTCTCAGATGTCTGTCTGTCATTCTTGCCTTTCTCTACACAGGTCAGTTTCTCTTATGTC
TGTTAGGAGTTCCCTATTGGTTTTTTCAGCTTTTGGGCTTTCAAACCTAATTAATCATAAGCTACTAGAG
GTACTACCTAAAGTGTGTATATACATATATACACACACACACACATATATACCTGGTATACAT
ATATATATATAATACATATATACATATATACCTCCCAACCTGATCTGGTTCTTCTCTGCATAAAAGAC
CTCAGGCCAGTCAGAGAAACATGTATGTTCCATGGTGGCAATCAAGCCCTTGTATTTGGTTCCAAATC

37/139

AGTCTCCTAACTATTACTCCAAGAAGCTCTTGTTGAAAGAGCCATGTTTAAATGGCATGTTCTACTTTTC
TTCTTCATAGTGATCTTACATCTGTACCATGTACCCCTCTTTCTTCTGTTCCATCTCTGTTAGGCTGATT
CTACCCAGAAGTCAAGGTTTCAGCTCAAATGCTATCCCTATCAGGTGAATTTTCCACCTGGCATTGTTGTCG
GTGTGCATTGTGTGCATACAGCACCTTTTCCCGGTACCTTTACTGTAATCACCAGATAATTCCTTTTCATT
TTAGTTGTAATAGAGTTGTCTTCCCCCTCTATGGAATAGATTTTATTAATGTATAGAGCAGCAGTCCCC
AGCCTCTGGACCATGGACTCGTACTGGTTTGGGGCCTGTTAGGAACGGGCCGCACAGCAGGAGGTGAGC
AGTGGGCATGCAAGTGATGCTTCTATCTGTATTTACAGCTGCTCCCCATCGCTTGCAATTATGCCTGAGCTC
CGCCTCCTGTAGATCAGCGGTAGCATTAGATTTTCATAGGAATGCAAACCTACTGTGAACGTGTGTATG
TGAGGGATCTGGGTTCTTCTTATGAGAATCTAATTCCTGATGATCTGTCTATTGTGTCCCATCACCCAG
ATGGGACTGTCTAGTTGCAGGAAAACAAGTTCAGGGCTCTCACTGAATCTACATTATGGTGAGTTGCATA
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TCATCCCAAAACCATCCCAAGTTCATCTGTGAAAAATGTCTTCCATGAAACCGGTTCATGGAACGGT
GCCAAAAATGTTGGGGACCACTCTTATAAGGCATATTAGAGTAATTTTCATAGATTTCTTAATTCATTAT
CATATTCATTCACTCAGCAAGCATTACTGGATGTTGATCATGTACTGGCTTTGGTGGTAGGTGCAGAGAT
TGGAACATTGTCTATCAAGGAGTTTATGGTTGAGTGAGGGAGATGACAAGTGATAGACAATGAAAAAAC
AGTAGAATAAGAACTGTGATAGAAAAGAGACAGCCAGGAGCATTGAGGAGAGGCACCTAACAGATGGAG
GATCTTGGTCCATTGTATGAGGTCAAATGGTTTAAATAGAGCAAGTGACCCTTTCAACTGAATTTT
AAGAATGAGGATTTAGCCAGACAAAAGAGGCGAGGTGAGGTTGTGAAGAGGAACGTAGTGGTACTCTTCA
GAGCTCCAGCCAGTTCTTGGACAGAATAAATGCTTACTAATTTAGAGCTGAATATTGAATTAATAA
AATAAGGTAACCTGTTAAGAATCAGAGAAATACTTAAAGAACTGATAGCTAGTGTGTTTGGACAC
CATGTACCCAGGTGCTTGTGCTTCCGAAAACCTTAATGATCATCTGTTTAAACCTTACATTTCTCATAAGAG
CTGGTACTATTGTTATTCTCATTTTATGGGACGTAGAAAATAAGACTTGGAGAGGGGAAGTGACTTCCCC
AAGGTCATACAAACAGTACTGGAGAATTAGGGATCTAGATCTAGAATTTGCACTCTGGAGCTTAAGGTT
TTAACCACGACATTATGCAGAGAAATGACAGGATTTTCTGTTGCTGATCAATTTACTTGGCAGTTAG
TTGTTTACTTCTGCTTTTATTGTTAGTTGTGACAATGCTTTCATCTTAGACTGTGCTCCGAGGCTGCTG
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AGTAGGGGATGTTTTCTTCTAATATCAGAAGCCAATAAATGAAATTTACAAAGACTTGCTGGTAGC
AACCTTAGGAATTTCTTTCATGTGAAACCCATCTGAGAATCTAAATCTGGGTAAATTTAGTGTAAAT
TTGGTGCAATCGTCTCTTTCACAAATAACATCATAGTATTGTCATCTAGGAGGGGCTTAG
ACATGATGGAATCCTACCTTTTATATTTCCAGGTGAAGAAATCAAAGTCTAGAAAGGTGAAGAACTC
CCCCAAAGTTTCCAGCTGGTAGACAGAACCAGGGCTAGGTCCTCTATTCTGACTCCTGACCACTACC
TCACACCTAATAGATGGAGGCATGCCAGTTCCTGTTCCAGGAGGCATCAGACCATGCCATACTCATTG
CTACTGTTCCAGCATTATAGTAGAAGCTCAAGCAAGCAGGATGACAGAATACCTAATCTGGTCACTAC
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ACTACACCAAGATGATTGACACAACCTATTCTACAGAGATATATATTTATCAGGATAGAATTTTAACT
AAACAAAATATAGCATTTTTTCACTTTGATTTTTTTTAAATGAGTCAAAGAAGTCTAGAATTTGTCAGT
TAAAAAATTTTAAAGGAGATATGAAAAAATCTTACAATTCACAATGCTGTAAGAGATAATGTAGGGAT
TAATATGTTCTTGATATCAATATTTTATGACTTTTATACATGTAGAAGCAAAACAATTTGAGGTAGGTGA
AGTTAGTATGGACTTCTTGAGATTGTCTTCACATTTCTTTCTTTCGGTGAAAAATGAAGGCCAAAA
TGTATTTTCTTCTGTTTTTGAATACTGTCAAGATCCTTGCAACAAAATGAGTTCCTCTAAGGAGCTGA
AAACAAAGCTCACTCCCTCGTGATACTCTGAGAGGCTTGTCTCAGCATCCTGCATTCTGGTGATTCTCT
GGAGACAGATGATGCTAAACACAGGAAGATTAGGTCAATGGTAACTTTTTCTAAGTCAATATTTCTCTC
CTTGGGAGATGATCATTTTAAATCTTCCGAAGTCCAGGCTAAACCTTTCTAATGAATCTCCATGAAGG
AGAGCTCCAGCAGGTGGAGAGGAAGTGAGAAAGAGAAATGAAAGCTGCACGCCCTCATGACGCTGTGCCAG
GGAGTTCTTAAAGGTGAGGAGTTCTTTTGGTAACCTAAGCTATGTGAATCAGAAGGTTCAATAGCTT
GTTTCTTTTTCTTTTTTGTAACTCCTACATAATTTTGTAAACAGGAACAGTAACCTAATGTGATATCC
CACTGGCCCAAGACTTAGTGATCTTCAAAGTTGCTTAATATGTCCGAAACAGACTTTTGTCTCTTGAT
GAGAAAGCATGGTTAAACGTGTGATGATTTCTATTGTCTGAGCTCAGATCTGTAATGTGGCCAGAT
TCATGCATCTCTGCTGCTTCTCTTAGAAGATCATATGTAGGCTTGTGAGATAAAACAGGATGCCAGG
TAAACTGGAATTTTCAATTAAATAACAATAACATTTTATGATGTCCTATGCAATATTATATACTAAATATT
ATTTGTGTTTATCTGAAATTCAAATTTAATTGAATGTCTGTATTTTGTGTTGTTACATCTGGCAGCCC
TAGCCATGCTGCTTCTGCTTAATGGGCTTAATTTTTTGAAGGCTGGAGGTTTCTGTTATGTTGCCCG
TTTCCACCTGCTTTTACCAGGAAAGGAGGCATGCTGATGTAGAATTTGCATCCTTATTTTGTCTATTA
TTATTGATTATTAACAGATGACATAGGTTTATAGTTAAACCTACATGACATTGCTGTCATTGAGATAATTG
TAATATTGCTAATTTGAAGAAGGATAATTTTTTTTGAAGTACTATTATTGTTTTTGTGTTTTGTTT
TTGTTTTCTTTTTTCTAATTATACTTTAAATCTAGGGTACATGTGCAAAATGTGACAGGTTTGTACA
TATGTATACATGTGCCATGTTGGTGTGCTGCACCTATTAACCTCATCCTTTACATTAGGTATATCTCCTAA
TGCTATCCCTTCCCCCTACCCCCACCCAGCAGGTCCCGAGTGTGATGTTCCCCACCTGTGTCCAA
CTGTTCTCATTTGTTCAATTTCCACCTATGAGTGAGAACATGCGGTGTTGGTTTTTGTCTTGGGATAG
TTTGTCTGAGAAATGATGGTTTCCAGCTTCATCCATGTCCCTACAAAGAACATGAACCTCATCTTTTATG
GCTGCATAGTATTCCATGGTGTATATGTGCCACATTTTCTTAATCCAGTCTATCATTGATGGATGTTTGG
GTTGGTTCCAGTCTTGTATTGTATAGTGCCACAATAACATACATGTGCATGTGTCTTTATAGCA
GCATGATTTATAATCCTTTGGGTATATACCAGTAATGGGATGGCTGGGTCAAATGGTATTTCTAGTTCT

38/139

AGATCCCTGAGGAATCGCCACACTGACTTCCACAATGGTTGAACTAGTTTACAGTCCCACCAACAGTGT
AAAGTGTTCCTGTTTCTCCACATCCTCTCCAGCACCTGTTGTTTCCCTGACTTTTAAATGATTGCCATTCT
AAGTGGTGTGAGATGATATCTCATTGTGGTTTTGATTGCAATTTCTCTGATGGCCAGTGATGATGAGCAT
TTTTTCATGTGCTGTTGGTGCATAAAATGCTTCTTTTCAGAAAGTGTCTGTTTCATATCCTTCGCCACT
TGTTGATGGGGTTGTTGTTTTTTTCTTGTAATTTGTTTGAGTTCCTTGTAGATTCTGGATATTAGCCC
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CCTGGCTAACATGATGAACCTCATCTCTACTAAAAATACAAAAATAGCCGGGCGTGGTGGCACACGC
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AGCCAAGCTTGCACCACTCCAGCTCCAGCTGGGCAACAGAGCGAGACTCCATCTCAAAAAAAGAA
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GTCTAGATAAACCTTAAAGAGATCTGCCCTCCCTCTCTACCTATTACAGTTGCAACACTTTGGGGGTG
GCTGCCCTGGTAGAGCTTGATCGTGACTCTGGTGGCTTGGGAGATGGCATGCTGCACAAGGGATTCTAGG
TTACAGCGGGCTTTGGGACTGGGGCTCTCCAATACGTGGTGGGTTGTAAAGAAATCAGAGCTATGGT
GTGAACAAAAGGATATGCATGGGAGACAGTGAGACAAGGAATGCTCCAGAAATATTTGGAATATAGGTC
AGATAACTAAGTGTACTTGTGCCATTTCTGGGGAAATTTCTCTGAGGCTTTTGGGAAAGAAATGGA
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GTATGGTGGATCATGCTGTAATCCAGCACTTTGGGAGGCCAAGGCAGGTGGACCACTGAGGTACAGGA
GTTTGAAGTACAGCTTGGCCAAATGGAGAAACCTCGTCTCTACCAAAAATACAAAAATAGCCAAGTGTG
GTGACACGTGCTGTAATCGAGCTCTTGGGAGGCTGAGACAGGAGAAATCACTTGGACCCAGGAGGTGGA
GGTTCAGTGAGCCAAGATCATGCCACTGCCTCCAGCCTGGGTGGCAGAGCAAGACTCCATCTCAAAAA
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AGGTGGAAGTGGAGGTGACTAGGTAACAGCTGAGTGATTTGCCCCAGTTGGACATGAGCCAGGTTGAGC
AGAAAGCCTGGGATGCGGGGAGGGGGTGGCGGGGAAGGAATTGAAGTTGGTTGTGTTGGCTTTTGC
GGCTTCATGGCATGCTCACACCTTGCTTCGCATAGCATGCTTAGACTACAGCAGGAGCATCAGGAAGTGG
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TTTGGAGCCTGCTTGTACGTGACCATGAGTATCCTGGTGAAAGCAATTTAGGCTGAGGGCAGCAGGGAAGAG
GCCCTGATGTGGGAACATCCCTGGTGTCTGAGGTACAGAGGCCAGCATGGCTGGCACGGAGTAAGAAAT
TGGAGGTGCGGGGATGGTGACTCACACCTGTAATCCAGCACTTTGGGTGGCTGAGGCAGATGGGTAC
CTGAGCCCAGGAGCTTGAGACCAGCCTGGGCAACATGGTGAGACCCCATCTCTACAAAAAATACAAAGA
AAATTAGCCAGATGTGGTAGCATCTGTAGTCCCAATTGCTTGGGAGGCTGAGATGGGAGGATCAAA
TTACTTGGGAGGCTGAGATGGGAGGATCACTTGTAGTCCAGGAGGTGGAGGTTGAGTGAGCTGAGATCAT
GTGAGGGTGACAGAGCAGACCTGTCTCAAAAAAAGAAAAAGAAAAAGAAAAAAGAA
GTTGGAGGTGAGTAAGGAGAGGACGTGGGGGACAGAGTCTCAGGACTCTGGCTTTTACTCTGAGTGAG
TCGAAAATCCAATTAAGGTTTGAAGAGAGGAATGACCTGATCTGACATTTTATTGTGAACGTTTTCAA
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TATATTTTAAAGTTAAACACTATGCTTTAAATATCAAGAGTTTGTATTGATTGCACTTTGAAGGTC
GAGCTGATGAAATTTCTGAGGGGTTGGATGTGACATGAGAGAGGAGTCAAGTATTGCATGGTAATTA
AACCTTTGAGCATGATGCTTTTACCAGAAAGACTATATGTATGCACTTCAAGCAGGTTTAAAGATTAA
CATCAAGCATCTGGCTTCATGAGTTTAACTTCTTTTATAAATGTTATACAATGTCATCATCTCTCCAG
CTAGAGAAAATGCTATTATTCTTATTTTCAAATGAGGAAATGACGAGAATTATTACATATTATGTAA
CTTGGTCCCAAGTCCCTTAGATACTGGTTTGAAGAAATCCTAGTAACTGGAAGTGACTTATCCAAATTA
AAATTTATTTTGTGCTTATGCTTTTGTGCTTGGGAACTTTGTGCAAGTAACATAGGCATGTGAGG
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CTCATAGGCATAACAGCATAGTCTAACAGTATAAAACCTGTGTAAGTGTGAGTTTCACTGAGTGTGAT
GAGGGCTGAGAAGATAGTGGTACAAGAGAGGAGTAGCAGAGTGAAGCTGAGTCAATATGATGAAGATT
TCTCTAGACTTGAAGGGCTAGAAAAGGTTATTCTTGGCAGGAAAAAATGAGCCAAGGCATAAGGAT
AAGCACAGGCATGGCAGATTTGGGAATGTGATGTAATTTGTGCTGGGCTGCAAGTACATGGAAGGGGA
GTGAAGGAACAGAGGAGATGAATCTGGAGGGAGAGGTTAAAGTGTCCAGAGAGCAATATGTAGGTGTT
ACTCTAAGTCAAAGAGGTCGTAATAGCATGTCCAGACTCCAAACTCTAAACAAGTCATAGAATTGCTGC
CTTGGTAGGGCATATCACACATCAACCAATCCTCTGTCCACATGACATCCATATAACTGCAACTCTA
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GCTATGCTCTTAAAGTAAAGCAAGACTGTTTTCTTTTGTACATGAGCAGCAAAAGGATAGGGTGCTC
TTTGACCTCACTTACTGTAGGGTGGATAGGAAAGTCAAGGAAGAGTAACCCAGAAGATTAGTTTAACT
TTCGCATCAAAGAGGTCCTTAGCATCTGCTCAGAGATGTCACAAATTTCTGGTGTGATGATGTTAAG

FIGURE 1, page 38 of 93

AATTCCGGCCTTGCCACTGTTTGAAGTTGTTCTGTGGAAAAAGAACCTCTCTTAATTTTACATGATGCCCAA
 CTTCTCTTTTATTCAGAAATCACTCATATGCTGTTGGACTCTTTCCAGCCATGTGTGCTAACCTAGGCCAA
 TGTCAATAATAGATGAATATGTTTACTTTGCTTTTGATATCTCAGCTCTTTTATCTTCTATTTCAAGTTCC
 CACCTCCATCTATTACATGATAGTGTTCTGTTGAACAAAGAATATGTCAGATATACAGAAGTGTCTCCCTC
 TTTCTCTGCTCTCTTTTTCTCTCTTTTCTTTAGTTTCCTTTCTCTGCTGTGTTTCTGTAGGCTCATT
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 CTTGATGAAACGGCCATTGTGCATCATACACGGTCATGGGAGTGCTAAGAAGACTTAATATGCGGGCT
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40/139

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41/139

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42/139

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GTTTGGCTTGAAGCATACAAATTTTCACTCCACTACTTAGTGTACAAACTTGATTACTTAAAGAGATTGAG
TAATGGCTCCAGTGAACGCATCTTTTTTAAAAAGCAAAGTGAAGGATGCTATTTAAGTCAGAAGGGGC
AAAATTGGATATTTTATGATTTTAAATCATTGAGGCATAGAAAGTAGTGTCTTAAAGATGTGTTTTA
GACAGAGTCCCTGGGATGAGTTATATAAGCAGATCTGGTTGTAGCTTCAGCAGCCAGATACTACCTTTGA
GTATTACTTCAAGGAAAAAGGACTCCACTGAGCTCACTGCTTCTTCTCATTTATTTTCAAGAGGTTGT
GTGGCTAGAGGGGCTCAGGCCATACCTATACACCAGTATGTTGCCATTTTATATTTTCTATATA
GGTGCCACAGAAAGCTGCTCATCAGATCAGACAGATAGCCCAAGCAAGTATTGATTTACAGATGATCT
TTGGCCAGGAAGACATGGTATCAGGGTAGAGTCTGGTTATGGGTCAATGCAGTGGGGACCTTAGGTCCCTA
CAGGTATAACTGAGAGCCTGATCCACCAGGCCCTAGAAAGCTTCAGGGTGAAGACAGTCCAGCACCTGGA
TAGCTCCCTTAAACAGCTGTGGCCGGTAAGCAGGCATTTATTTGCTAAAGAACTCAAGCCCATTTAGCTGG
CTTCATCTGCTTTGTAGAGCTCTGTTAAAAAGAGTTTCTTATTTCTCCACATCCTTCAGCACCTGTTGT
TTCTTGACTTTTTAATGATTGCCATTTCTAAGTGTGTGAGATGATATCTCATAGTGGTTTTGATTGCT
TTCTCTGATGGCCAGTGATGATGAGCATTTCTTCATGTGTTTTTGGCTGCATAAATGTCTCTTTTGA
AAGTGTCTGTTTCATGCTCTCGCCACTTTTTGATGGGGTGTGTTGTTTTTCTTGTAAATTTGTTTGA
GTTCAATTGATATTCTGGATATTAGCCCTTTGTCAGATGAGTAGGTTGCGAAAAATTTCTCCCATGTTGT
AGGTTGCCTGTTCACTCTGATGGTAGTTTCTTTTGTCTGTCAGAAAGCTTTTAGTTTAAATAGATCCCAT
TTGTCAATTTTGGCTTTTGTGTCATTGCTTTTGGTGTGTTGGACATGAAGTCCCTGCCCACGCCATGT
CCTGAATGGTAATCTTAGGTTTCTTCTAGGTTTTTATGGTTTTAGTTGGTGGGACTGTAACATAGTT
CAACCATTTGTGGAAGTCAGTGTGGCGATTCTCAGGGATCTAGAAGTAAATACCATTTGACCCAGCTA
TCCCATTACTGGGTATATACCCAAAGGACTATAAATCATGCTGCTATAAAGACACATGCACATGTATGTT
TATTGCGGCATTTACAAATAGCAAGACTTGAACCAACCCAAATGTCCAACATGATAGACTGGATT
AAGAAATGTGGCAGATATACCCATGGAATACTATGCAGCCATAAAAAATGATGAGTTTATGCTTTT
TAGGGACATGGATGAAATTTGAAACCATCATTTCTCAGTAACTATCGCAAGAACAAAAACCAACACCG
CATATTCTCACTCATAGGTGGGATTTGAACAATGAGATCACTTGGACACAGGAAGGGGAATATCACACT
TGGGGACTGTGGTGGGGTGGGGGAGGGGAGGGATAGCATTTGGGAGATATACCTAATGCTAGATGACG
AGTTAGTGGGTGCAGCCGACAGCATGGCAGATGTATACATGTAACTAACCTGCACAAATGTGCACATG
TACACTAAAACCTTAGAGTATAATAAAAAAATTTAAAAAAGAGATCTTAGTTCTTTTGGGC
TTGGGACTCACTCTTGTCTCACTTAAAGTGGATTGGTTCTTACATTTATTTTCTAGTTGTGCTGGTCA
CCTTCTGGCTTGTATGTATGCCCTATGTCTGGAAAGGTTAGAGAATGGGGTAGAAGTGGAGGCTGCCCC
CCCATCATGTAACTGTTTTATCTTTTCAAGATACAAATGGGATCCTAACTCTTGGTCTCCGTATTTC
ACATTTGCTCTTATACGATTAGTTTCCATGCAACAGCAGGAGAGATATTTAGATATATTAATCAGGTC
CTATGGTCTTGTAGTTTACAGCTCTCAGTGTAAATCTTACTCTCAAGAGAAAAATTTCTTCTGCAGTG
AAAACATTGCACATATTCTCTCTCTTCT
ATTTTATTTTATTTTGTCTATTTCCCCCAACAGCCCAACATGTTCTCTCTCAGGATCTCAGCACATGT
GGTTCCTCTTTTCCCTTTGCTTGAATACCCAGATCTTTACTTGGCTGGTCTTCTGTCTTCAAGTCTG
CCCAAGTCACTTTCTCAGAAAGTAGTGTACCCTCCACAGTAATACTACTCTTCTCTCTTACAGC
TCTCAAATCTTATGAAGTTTTCTATTTATTCATTTGTTGATTATGTCTGTCTGATCAGGTACCGT

FIGURE 1, page 42 of 93

43/139

GCAACTTGGATGTAACTCAGTGATAGCTGATTTCTGTTTCAGCATTGTTTGTGCTATAGCTCCAGTGC
TTTTAGTTCATGTTGGGCACGTCCTTACTAATAAGTAGAATATGGCGAAGGGTCAGAGTCATGATAGATAG
CCGGATGTGGTGGCTCATGCCATAATCCCAGCACTTTGGTAGGCTGAGATGGGCAGATCACGAGGTGAG
GAGTTCAAGACGACCTGACCAACATGGTGAAACCCCTGTCTCTACTAAAAATACAAAATTAGCCAGTTG
TGATGGCATGTGCCGTGAATCCCAGCTACTCAGGAGACTGAGGCAGGATAATTGCTTGAACCTCGGAGGT
GGAGGTTGCAGTGAGCTGAGATCGCGACACTGCCTCCAGCCTGGGCGACAGAGTGAGACTTCATCTCAA
AAAAAAAAAATAATAATGATAGATAAAAACTGCTAGAGGCTCTCTGAGAAGGAAGAAATGTCACTGGGT
TAGGTTGGTAAGAGAAGTGTAAATGCAAGTGGTACATTTGATATAAGCATGCAATAAATGGTAGTTTGG
AGGAAAATTCAGAAATGTGAAACAGTATTGAGAAATTGAGTAAGCCAGCTTTGAGAGAACACACGGCTT
ATTGTCCTCTCTTCTGTTTGTCTCCTCAGCTCTCTAAAGTGGGCATTCTCTAGGGTCTGTCTTCAATC
TCAGCTTCTTTTCTTCTTCTCATCTCTCTTCCACCTAGTTTCTAGGGAATTATATATATATATATAT
ATATATATATAAATTTGTATATATATACAAAATTATATATATATATAATTTTATATATATATATAATTTTAT
ATATATATAAAAATTATATATATATATAAATTTTATATATATATACAAAATTATATATATATATGTCTGGTACA
GGCTGAATTTGTCTCTCCAGAAAGATATGTTGAAGTCTAATGCTCAGTGCCTCAGAAATGTGACCTTATT
TGGAATAAATGTCTATTCCAGGTGTAATTAGTTAAGGTGAAGTTATACTGTGGTGTAACCCACAGTATAGT
TCCAGTATATACTTCAGTATATGGGCCCTTAATCTAATGTGACTGATATCTTTAGAATAAGAAGAAAATT
TGGACAAAACACAGCAAGAGAAATGTCTATGATAACAGAGAGAGAGAGAGAAGAGAGAGAGAGAGAGAG
AGAGAGAGGAGGAG
AAACATCTACAAAGCAAGGAACACCAAGATTGCTGGTGCCTAGGAACTAATATAATAACATAATATTT
GGGGCCTAAAGTGTACAGCTGCACCAATATCTCCCAATCTGTCTCTAGCTCCTGCCCCAGCCTGATT
TTCTCAGTACTCCCTGTGTTTCCCTCTGCCACAGCCCTCCTTCTGCTGTGTGTGTGACAGTTCC
CTTGCCACTTCCCTCCGGCATCCGTACTTCAAACCTGGGAGTTAGTTATTTCCATTGTTTCTTATTGACG
CTCTGGCTCTGACGTTTCCAGAGCTGTTGCATAGCTCTATTGAGTCTATCTCTTAAATGCATTTTCATC
CACTTACCATTGCTGAGTTAGCTGCATTACCTTTTACCAGGATGCTTGCAATAATTTATTGTTTCCATT
GCCTTCTCTTCTCATTAAGCCGTTTGCTTATGCTCTTTTCTTGTGCGAGACATTCTGCACATTGCCAC
TCTATTAGTGGTCTATAAGCAAACTCACTGATCATGTCAATACGACAGTACAAGATCCTTAAATGACCTCCA
TAGCCCATGGAATGGTCTTAAACAAGAGTTCAGGAGTGCACAACTCTGTTCTAGCCTATCTTTCTAG
TCATTTTAAAGTCAACATTTTACTTGTGAAATAGGCACCTCCAGACACAGTGAATTCCTTGTCTTCTTAC
AAATATGATGATCCATTCTTGTGCTGGGAATTTCTTCCAGATTACCTGTAAAAATCTTCGAACCTT
AATCAAAAGTGACTGTTGTTTGAAGCCCTGAGAGATAATGCAGAAATCTCTCTCTCTGCGGACCTCGATAT
TAGTTTATTCATTGTATTGCATATATTGATTGCCCATGTTCTGTCTCCATACTGACTGTAAAGTCCCTTA
AAGGTGAGGGCCCAATATTCTCAGAGTCACTCAATAAATAAATAAAGAAATAAATGGAATTAGGATCAG
TTTGTGGGCTTTAGCAACACAAAACATTATACTTTTCAACATGGGAGAGGTATGATGAAGGAGTTTTT
TTTTTTTTTTTGCAGAGAGTCTCACTCTGCTCACTGAGGCTGCAGTGCAGTGGCATTGTGTGAGTCA
CAACCTCCGCTCTCTGGGTTCAAGCAATTCTCTGCTCAGCCTCCCGAGTAGCTAGGATTACAGGCGTC
CACCACCATGCTGCTGCTAGTTTTATATTTTTTAGTAGAGACGGGGTTTACCATGTTGGCCAGGCTGTCT
TTGAACCTCTGACCTCAGGTGATCTACCCGCTTGGCCTCCCAAGTGTGGGATTACAGGCGTGAGCCG
CCGACCCCGGCTGATGAAGAGTCTTTAATGCAGATTAATCTGGCAGAGGTATATAGGAGGACAGAGA
AGGGAAAGAATCAAAGCGTGAAGACCAATTTGGCTGATATTCAACTAGCTTAGATGTACTAAAAATCTGT
ACTTTTTTGGTATTTGTGAATGGAAGAAGGGGAATAGAATAAAGGATATTATAATGAAAGGATATACAT
TGCTTGAAGGTAATTAATATGGGTTATCCAGGAGATAAAGAGTTAAAGAGGTTTCAGACATAGACTGAA
TGAACATGAGAAATGAATGACTTGGTCACCAAGAGGAAGGCCAGTCACTAGGGGTTAGGATAAGTTCAATT
CTAGACATGCTGCATTTGAGATGATAGTGGATGTCCAGATGGAATTTATCCAGCAGCCACAGAAACGAA
TCAGCTCTCTGCGGATATTCCAGGGGTGGGATTTGAATTAATTTCTCAATTAATTTTAAAGAACTTG
ATGAAAAGAAATGGTCTGAATACCTTGAAGGTTGCACATTATTAATAATGGAGAAATAACTCTAAACC
TTCTCTTGATTTTCAATAATAATAAGCATTCCCTGAATCTTACCAAACCTTGTAAGAAACACTCTTAT
TATAAAAGTGTATCTGCAAGCCCTTCAAAAGGAAATGATAAATTAGTCTTACAGGGCCAAATGCA
GCTCTCTGGGAGCTTACAATTGAGAAAGAACATCTCTGCTACCAGCACATTAAGCTGTACAAATAGTAAAC
TGAGAAACAAATATAAGCATTTTTATGATGTCCAAACAAGAACCAAGCAGGTGTTTTTTTTTTTTTTTT
TGCAGATTATTATACCTGTGGCAGTTTCATAGCCTCTTTTTCGGACCCAGAGCTTGCAATACTCTCCCTT
ATTTCTACTTACGTTTACTCTCCATCATGTGTTAACATACATACTGTGCAACAGAAATGACTATTGGA
GGCTGAGGGCAGCAGAGTTTTAGTGTGTACACATATGAGCTGTCTGTAATTTTCAAGTGAAGCCTTTG
CAATGAACTTTTTTAAAGAAAGTCAATGGCCGGGTGCGGTGGCTCATGCTTATAATCCAGCACTTTGGGA
GGCTGAGGCGAGGATCATGAGGTCAAGAGATTGAGACCATCTGGCCAAACATGATGAAACCCGCTCTC
TGCGCAGAGAGTGAGACTCGTCTCAAAAAAAAAAAAAAAAAAAAAAAAAAAGAGAAAGAAAGAAAGAA
GGAAAGAAAGAAAGAGAAAGAAAGGCGGGCATTAACCTCAGGTATTGGTAAATTTGCTAGGTGTTTGG
CTACTGTTTCTCATCAGAGAAATAGAAAGACACACCATGAAAGTCAAGGCTGAAACCTCATCTCATGT
AAGAATGACATCCCAGTGTTAAGTGCTTGTAGTGGTTAATGCGATCCTGTGAACTTAGATGTGTTTG
TGACACATGCACGATATATTGAAGAACTCAGAAAGATTAAATCACAGCCTTTCAACCTGTGAAATGA
CAGTAGTCTTCTTTTTCTCTCCCTTTGGCTAAGTCATCTTTATCTTGGAGATAATTAAGACAAAAT
GCCCTGACAAATAAATCAGTATAGAACCCCTATTCTTGGCAGCTTTTGTGGACACAGCTGAAGCTTT
CAGAGGTCTGAAACCAATGGCAACAAATGCCCTTGAAGGGAAGCAAGGTTCCAAATGTTTTTAATC
GCTGCTGTTTTTCTGCTACCACTTCAAGCATTTTCTTCTATTTTTGTTCTGATCTGATCAAAATTAAT
TCCAATTTCCCTACTAAGTGGTTCTGTCTGGTCACTGACATTGACTATTTCCATTAAAGTAGTAGAGTTT
GTGCCACATATGTTTGAAGCTCATCAACATCCATTAGAAAGCTTTGTTTATCAGTGGCAATAAT
TCCCAATAAAATATAGATAGGTTTTAATGGGCACATTTTCAAAAGGCATCAACTCGTCTCTCAAAATAT
GTGCTGACACTGTTCTTACAACCATGGTTGCTGGCCTAATCCACCAATTTCTCTTTTTTCATAGAGA
ACTGTTGTGCTAGTCTTTATATCTTTTAAAGAGAAATGGTCTGTATCTCTGATACTCATTCAGAGAAATG
AGTATTTAGACGTAGGTTGCTAATTTAAGCTATATACACTATGTGACACTATATAGGTTATCTT
GTAACCTGCTTGCCTGGCTATTTGGCTGAAAAATAACACATGTAAGGAAATCTATTTTCAATAGCTAA

FIGURE 1, page 43 of 93

CATTACTTTGTGTAACAACTGTGTTCTGGCTACTCTGTAAATTTTCCACTTACGTGTGGGTTAGAGAGCAGAT
TTGATTTTTTTTTTAAAGCGAAGATATGGCTTACCTGAGAAAAAGACATAGTGGGGAAGCACTCCTTATTA
TTTTCTCTCATATTTCCATTTTCTTTTACGGGAAATAAAAGACATTTTCAGTTTTTTCAGTTGCTAAGAAAT
GAAGGAACCAAAGACAAACCACTTAATTTATAAATACATATTTTCTGTAATAAGCACTCGTTTCTCT
CTGTTTTCTGGGAAAGAGTATGTGGACTTTCAATTTTATCCAAATAAGCATCATCTTTCTCTGATTAG
TGTGGCAGTTTCAAATCATGTATTAGGAAGTACAGAGTGAATGAGTAGAGAATTTCTAAATTAGCACCC
AAGGTTGGGTTGGCTAGATTATTTTATAAATATGAACATTTTGTATTAAAGTCAATGATTTTAAAGAAATGC
CTGCATCACTTTTAGGGCATTTCTTAAGTGTCTGACACAATTTTCTTATACATATAAAGATAAA
TTATAGTTCATAAAATAGTATAAATTCCTAATTAATTTTGTGCTTTTGACACCTCAGAGTTACTAATAAGG
GATTTTCGTTTTAAATGATATTTTATTTATTTATTTAGAGACGCAGTCTTTCTCTGTGTGCCAGGTTGGAG
TGCAGTGTGTGCGATTTTGGCTCATTGCAACCTCTGCCTCCAGGTTCAAGCGATTTCTCTGCTCAGCCCT
CCAGAGAGTGTGGGACCAAGGATGGGCCACCAACCCAATAATTTTGTATTTTGGTGGGAGACGG
GTTTCACGTGTGTGGGCACACTAGTCTCTAACTCCTGACCTCAAGTGGTCTCTCTGCTTGGCCTCCCA
AGTGCTGGGATTACAGGCGTGTAGCCACTGTGCCTGGCTCGTTTTAAATAAATTTAAAGTATATTTTGC
ACCACATTAAACGATTAAAGCCATAGGTGATATTAATCAATCCAGTGGAGATGGTTTTCTTCTTTATTTT
ATTTTGTGTGTGTTCTGATGCTAGCATGCTGATTACTCTCTCTTCTACAGTGTGCTCGAGGCCAGCC
CCATTTTGTCTCTCTTCACTTCAATTTTTCATTTCTCCCTGTTTCACTCTCTATAGACATTTGTACTCTG
TCCACACTAGAGACCTCCTGTGTAAGTCTTTCACATTTCTCTTCCCTAGAGAGGTTAACTTGTGAGC
TCAGAGACTTAAACGTTAAATAAAATGAACAGATATGTTATGAATGACTATTTTATTTAGCTCTAGGA
GAAATGCAAGATATATCATCTACAGACCTGAAATCCAGTCAAGGTTCTGCTTATACACAGGTGAA
GGTTGTGATAATGCACATTAAACAATAGAAGAGTTAAATTCAGCACTATAAGTGATGCCTCAAAGCAGCA
TAATGGGAAAAAGGGGTAATTCAGAAAAAATGGTGATGAGTTTCAGAGGCAAGAGAAAAACAGAAATGCTCTA
GATTAACCTCAAGAGCTTTATGGAGAGGTTGGTTTCAATAGATACCTTTCCACAGAACCATGAAGAGA
GTTCTACTTAATGTGAAGTGGCTGTGATTGTGCTGTAGTTCATGCTCAATTCGTGATGTGTGATA
ACTGTGTATTTTATGGCAAAATCGCAATTACTTTTGACCAACCTAATAGAATAGTGTGGGTTAAAAA
AATATTTGTAAATATATTCGAACATATTTCTTATATATATGTTTCACCATTATAGCAGTAAATCTATTT
TGCATCCAGAGATTTGAATAATATTTTGTCTTAGAGTGTGAGTGTGATGATCTATTTAACTTACTTTTGA
GTTTGACATGGGAGTGATTAATAAAATCTAAAGATGCTCCTAAAGAGGAGCAATGATAATGTAGGTA
TAGATAATGTAGCTATTATGGAGGTAAGTGTATTTGATACTTTTTATGATATGAAGGAAACAACTA
GTCCCAAGCTACAAATTTAAGGTAGGCTTAGCTTATACGCCATAATTTTATGTTTGCACACTTCTTG
ATTTTCTTCTCTGCTTACTTCTCTATGGGATATTTATGAAAGGATGTTTTAAAAATGGCTAGAGACTT
TGTCTTCTAAGAGTGTGACATAAACTTTCCACACATGAACAAATAGTAGATGATACATCTAGATACACT
CTTGAATTTTAAAAATGTGGCAGTAAAACTGATCTCAGAGAAGGAAGAAATGCTTTGGCCAGCTTTTA
TCAATTTATATAACAGCTGTTTGAAGATTTCAGTTCCCTCTCGCCTTCTTTCTCCCTATATAATACTTTTTC
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AGAAATGGGCTTCTTCTACTCTGCCACTGTTCTGACTGCATTTCTCTGACTTCTGTAATCTCCGGG
AGGAGCTGGAAGAGCAAGGTGTGTCTAGCATAACTTTGGGGATGAAGTACCCCTTCTTTTTTCTGATT
TGTTCCACATCTCTCTTACTGGACCAAGTAAGGGCATCAGTGTCAAACCTTCTGATTGAAGATACATTTT
TGCCCTACCATTGAAGGCTCTGGGTAACATTTATGCTTATAAAATGCTTTTTTGGTGGCTACTTTGTGTT
TCGAATATAAGGCAAGATAAAAGTTTGTATTCAAGAGTTTCTTGTAAACACTTTGTGTGCGTGTGAT
TCATATATGGCTGCACACGTACATAAGTCCATACATAAGTACAGTCCACCCCTCCATGTTTGTGGGTTCAA
CATCCATGGATTCAACCGACTGCAAAATCAAACTATTTGGAAAAAATGGATGGTAGTGTCTGTGCTGAA
CATACACAGAGATTTTCTTGTCTATTTCCCTAAGCAATATAACAACCTGTTTTCAGAGAAATGTACATTG
TATTAGTATTATTAATTAATCTAGAGATGTTTTAAGCTATATGGGATGATGTGCGTAGGTTATATGCAAA
TATTATGTCAATTTATATAAGGGACTTAAACATCTATAGATTTTGGTGTCTGAGGAGTCTTGAACAAAT
CCCCACAGATCCTGAGGGGCCACTGTATATATATCTTCATAAACACACCCACACACAAACACACC
CACCCACCCACACACACACACCACTATGTATATATACTTTTTTTCTTTTTTAACTTCAGACCAAG
TCTCGCTCTGTGCCCCAAGCTGGAGTGCAGTGGCGCAAACCTTGCCATTTGCAACCTCTGCTCCGGGT
TCAAGTGATTCTCTGCTTCAGCCTCCCTAGTAGCTGGGATTACAGGCGCCTGCCACCATTGCTGGCTAA
TTTTTGTAGTTTTAGTAGAGGAGGGTTTACCATGTTGGCCATGCTAGTCTCGAACTCCTGACCTCAAG
TGATTTGCTTGCCTCGGCTCCCAAGTGTGGGATTCAGATGTGAGCTACCACACCCAGTTGCAATGG
GTATAGACTTTTTGAAATGTGTACTACAAAATATAACAGTACTATCTGAAATGATAGGATTATGGATA
AATTTTGTCTTTTTTGCATATCTGTATTTTTATTTTTCCACAGTAAACATCTTTTACTTCTGTAATAAAA
ACTTCATATAAAAAATCATGCTGCAATTTGATTAATATATACTAACTTTTTTTTTACTCTTCCCTCAGTAC
AGAAAGATTATCTGTATTTACCAAACTTTACACTTTATTTGCAAAATCATTTTGTACTTCTGTTTGCAG
GAGGTCAAAATTTGCATCAAGTTCAGCTTTCTGTTTATTTCCATGAGGCCAAGAGAAATGTGTGAGGTG
GACATCAGGTAGCTGAGGCCAATACAATATTTATCTTTGGGTTGTTGAGAAATCATAGCAGAGGAAAGC
CTGTGTTGATAATAGAGTACCACAGGAATCTAGGTCCTTACAGCTGCTGGCCAGGACGCAAGGTA
ATGTTTTCAGTCACGACGAGCTGATTTAACCCTAGCTCTATATTCCAGAGAGGACGAGCTAGCCCTT
TGTTTTGTGATCTGTCTACTGATTCGAGTGTGCATATACTAGCATAGGCTTACACATGTGAAGAGC
ATGCTACACACATAGACTAGATACACTGACTCATCAGCCTGGAACAGTGCCTGACCCCTCACTTTGATTG
TTTGAATGTGTCTGACCCATTTACCTTGCCCTTGGATCGCTTCTGTTTTTTTTTTTTTTTTTAAAGCAT
TTTATCTGTGAATTAATAATAGTACTTTTCCATTTGCTTCAATTTTTTCTTCCCTGAGGAGTTAGCTTTGTT
AATTAGAACAAGACACAACATCACTTACCTGGCTGGTGCATCTGTTTGGAGACTCTCTTTTGTGTAGAA
CTATACCTGGATTAGGGATCACTGTGATTAGAGGTGTGCAGTATGAGGTTATTTAAATACTTAAATAGTAT
ATTTGAAATGAAAGAGTAGAAATTAAGACTGAATCAATTTACCAAGAAATAACAGAGGAGACCAATTTA
CTTCTGTGAAGATTAGTAGAGGCTGTCCCTCTTTAATAATGGGCTTTGTTTTCAGTTACCAGTTTAAGTG
GGTGAACGTGTTATTAAGAGCTTAGGGTAAGGTACAGTAGCATCTTCTAAGAAAACTACAGGAGTAG
TCACTGTGCAGCTATCTGCTTTGTACCTGCCAATATGGCAGTAGATATGGAAGGGTCAGAAAAACAGGAC
TTCATGTTCAATAACTTTTCTCTTTTTCTTCTCTTCTCTTATTTTTTTCATGCTCTGTATGCAAGATAGC
ATGCTTATTTCTTACCTTCAATGTATTTTGAATTTTTTAATCCAGATCATATTTTATCACAATTTTGAAC
ATGTAGCTAATAAAAAATGGTTATTACATAGAGAACTTGCCTTACAAATATATAGATCAAAATTTTATACAA

TTATTATGTCCACCATAGAAAAATAGTTACGATTTATCTGTTTGTAGCTCTAGAAAAAATATTTCCACATATTA
GTTAAGGCTTTTGTAGTTTGTAGTGAGCAAAATCCAATTCAAACCTAGCTTTGGGTAGAGGTTGGGGGTAAAG
AGAGGAATGGATTTCAATTGGAAGGTTTACTTGCCTGCTCTGGCTTAAGTGCAGAACATAGGCGAGGGTGCAACC
AGACCTTAGTGATCACAGACCCAGGACCTAGACAGCTGTGAGGACCTAGCCTTACGCCCATCTTCTTCC
ATGTGTCAGCTTCGCGTTCTCTGTCTGCAAGTATGCATTTTCCCTAAGGTGGGAAGCAGAGTTGGCAACA
GCTGCCAGGGTTGACTTCTGTGCCATTTCTGCAAGTTAGCAAAATATAGAGAAGGACTCTGCTTGGCCCA
GCTTTGGGACACACCTCTGGACCAACTAGCTGTTCTCAGGAGGCGTAACATGTACAGAGGTGATCCCTG
GGGCTGCCCTGTGAATCATTGTGAGCCAATCACTACCTCCCTGCTGATGCTGATGCTACTATGTTT
GATGCTCTGAACTTCCATTTCCCTCAATTGTGAATGGCACCCCTGGTTCCCTACCTTCTGCTGGATAGATGTAG
TGATTAGAGTTTCATGCTTAACCTACAGGTGCTCTGTAAAGAATCATTTGGCATCATTACCTCTTGTGTGGCT
CTATCCCATTTCCCTATAGATATCTTTCTGCTCTGAGACTAAGCAGAGAAAAATTAACATTTTAATTAT
TGTGCTTCTAAATCCACTTTTACTCTTCTTCTTACTTTTCTTCTTATTTATTTATTTATTTTCAAAA
ATAAAATTTGTATATATTTAAGGTGTACAAGATGTTTTGTATATACATATACATAATGAAATGATTACTGCA
GTCAAGCTAATTAACATCAATCTCCTCACCTAGTTATCATTTTTTGGGGGGCATGGAGTGAGAGCACCTG
AATCTCTCTTTAGCAAAATTTCCAGTGTATAAATACAGTATTTGTAACATAGTCATATGTTGTACATTTAGA
TTTCTAGACTTGTTCATGCTACATAAATGCAACTTTGTACCTTTTGACCAATACCTCTCTATTTCTCCCA
CTATTTCCATGCCTGAAATTTGTGGGATATAGGTATATAGTGTGTGTGATATATATAGAGGGAGTATATAT
GTATATATAAATTTGTGTGATATATATGTGTATATACAACACAGACATACACACATGTACATATGTA
TATACATGCACACATACACAATGGGATATTTTACAGTTTCAAAAAGGCATCCTGCCATTTTGCAACAAC
ATGGATGAACCTGGATGACATTTGTTAAGTGAACAAGCTGGACACAAAAGAACATGCACCTTACTT
CTTAGACACAAATTTCTTTCTCATAGCCAGCACCTGAAATAGGGCCAAGTATTTTGCATGAGTTTACAAT
TGACTGTATAAATGTAGCATAGCCAGTTATATGATGTGTACCATTCTGCTATAAAATCAAAAGAAAGAG
ATCAGAACATTTAAAACTTCCCTGTGGATTTCTACCTTCTACCTAAGCTTTGTTCTGTTTTTAAAC
CTCATGAACACGGAAGCTTTAGTAGAGCGAGGCTCATGTATCCTTGGCTCAAATATACAGTTTCTTAGCAA
TCTTTGATTGCTACATTGCCCTTTTTTGTGTTTTTAACTGGCCTTCCCTGACTTAAAAATATCTTTAAAA
AATAACAAAGGTGGTATTTAGTTTGCACAGTATGGAATTAAGGTAAACAACTTTAAATTAATTTGGTT
GGATGTATAAATTTAAAAATCTCTTCTCTCATGGCTGGGTAAAGTCTGCATTTTCCATTTACGCTGCT
ATGCTCTTTTCCATGGAACACTCCCGAAGAATGGGGCCCTGCTTCCAAACAGCCAAGCATTTTGTAGT
AAATTTTAAAAAGCTAAATTTCATATAAACCTTTATAATTGCTACCTGAAATGGAGTTTGAATGGCAC
CAAATTTATTAATCAGTGAAGGAGATAGATTGCAAAAAGGTAAATTATATCAAATTTGAATGCTTCTTGAA
ATATATTTCTGTTAAATAAAAACAGACTTCCCTCTTCCCTGTCTCATTTTGAAGCAATGAGGACAACTTCAGG
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ACTGTAGATGAGCATTGTCTTTAACTGCGGGCAGCAGAGGTGACACGCTTACTGCAAAGCCAGAA
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TAGACTGTAATTTCTGGTTGTTTAAAAAGGCTGTTTGAATGTATTTTGTTCAGAGGCTTGAGTAAATGGCT
CTTATTTCTTACATTTTTTTTTTGGCTCTCTTTTCCAGCATTAGAATAGTTTACGCCCTGACAATTAGCC
TTATGCTGACTGGAGTGGATTTTTTGGCGTAGGACCAAGTGTTTTGCATGATTTACAATGGACTGCATAAA
TGTAGCCTAAACAAGTTATATGATGTGAAGAAAAATTACTTAAGGGTAAAAATGGATTTGTTTACTGAGAAA
TGATGTTATTTATAAATCGGTTTGGGGTATTTGGGTTTGTAGTGTCTGCTTCAAAATTTAGAGCTCTGTTG
GTTTGAGAGTTTAATACTAAATAAATAGTTAATGATGTGAATGAATACTTGCCTGCTCCAGGCTCTATG
TTACGTGTCTGAATGCATCATCTCATTTAATCCTCCATAAAATTTGAAGCAGTCAGCATTGTAATTAAT
CTCACCTTTTCAGATGAGGAACCAAGGTATGTGAAGAAACAAAACCAAGTGTTGAATCTGCATAGTAGGACT
GCAAAGCCTGACTCTTAACTTATGTTTCTGTGCTTCTCAGGAGGAAAGGAGTCTTCCAGAAAGGCC
ATTGGAAGTGAGGAGTCTCACTGTATTAAGCTGGCTCTCATCCCACTAGGTTAACAGGCAACAGATGG
GGGCCACAGAGTTGGCTGGAGTTAGTCTGTTTGGCCAAGGGTAAATGGGGCTGTTACCATGCAATGGATA
GAAACTAGGATGCTCTCTGTGTCTCTCTATATCTTACCAGGTGAGCATGAAGGTTAAGGACAATTCGG
TCCCTCTTATTTGGAGAGGAGACCAAGGCCCTGTAGGACTAAAGGTTTGGGTGAGCTGAAAGCCAAAGGCCA
ATTGGCCAGCTTGGGGAGGAGAGTTACAAATACATTTGTGACTATCAGACAGAAACAGACTCGGCTGT
TCACCTGCGGTTTGGGTACCTGCTGCTTGTCTTTGCTGGGGTATCTGAAGACTGAAAACACAGCTCACA
CTTAGCCTTTTCTCTATCTGTGTGAAGAACTGATAGTTTTCTCTTCTTACCAAGGTTCTAGTGGT
GAAGTTTATGCTTAGTCTGTGAGTTGTAGGAAATAAACCAAGGATGGGATGGTGAAGCAGACAGAAAA
GAAAGAAGATTGTAGATCGCAGGCTGGTGTGCGCTGAAATTTTAAAGTATACAGTTCTCTTTTATGG
ATTATTTAAAAAAAACAGCAAAATGAATACACAAGATTAATGTTAAGCAGTACAACATTTGTACATGATGA
AAGGTTAAAGTCTTCTCTGTGCTCATTTCAAAAATCTACAGTCTCTTGTAGTATAGTTTGAAGTCAGGTA
GCGTGGTGCCTCCAGCTTCTGTTCTTTTGGCTTAGGATTTGACTTGGCAATGCGGGCTCTTTTGTGTTCCA
TATGAACCTTTAAATCTCTGTGATGAAGGTCATTGGTAGCTTGTAGGGGATGGCATTGAATCTATAAATTA
CCTTGGGCAGTATGGCCATTTTACAGTATTTGATTCTTCCCTATCCATGAGCGTGGAAATGTTCTTCCATTT
GTCTGTGCTCTTTTATTTTCATTGAGCAGTGGTTTTGTGGTTCTCCTTGAAGAGGCTCCTTCACATCCCT
TGTAAGGTGGATTCCTAGGATTTTTATTTCTCATTTGAAGCAATTTGTGAATGGGACTTCACTCATGATTTGG
CTCTCTGTTGCTGTTATTTGGTGATAGAAATGCTTATGATTTTGTCAATTTGATTTTGTATCTGAGAG
TTTGTCTGAAGTTGCTTATCAGCTTAAGGAGATTTTGGGCTGAGACGATGGAGTTTTCTAGATATACAATC
ATGTCATCTGCAACAGGGACAATTTGACTTCTCTTTTGTCTAATTGAATACTCTTTATTTCTTTCTCCT
GCCTAATTTGCCCTGCGACAACCTTCCAACACTATTTGAATAGGATGGTACTGGTACCTGACCAAGACAGATA
TAGACCAATGGGAGTACAGAGCCCTCAGAAATAATACCACACATCTACAACCATGTACTTTTGAACA
ACGTGACAAAAACAAGAAATGGGAAAGGATTTCCCTATTTAATAAAATAGTGTGGGAAACTGGCTAGCC
ATATGTAGAAGCTGAAACTGGATCACTTCTTACACTTATACAAAATTAATTCAGATGGATTAAG
ACTTAATTTAGAACTTAAACCAATAAAAAACCTTAAGAAAGCACTAGGCAATCCATTCAGGACATAGG
CATGGGCAAGGACTTCATGCTTAAAAACCAAAAGCAATGGCAACAAAAGCAAAATTGACAAATGGGAT
CTAATTTAACTAAAGAGCTTCTGTTCTTTGCTGGGGTATCTGAAGACTGAAAACACAGCAAAAGAACTA
CATCAGACTGAACAGGCAACCTACAGAATGGGAGAAATTTTGAACCTTACTCATCTGACAAAGGGCT
AATATCCAGAACTCTACAAGACTCAACAAATTTTACAAGAAAAAGCAACCCATCAACAAGTGGGTGA
AGGATATGAACAGACACTTCTCAAAAGAGACATTTATGAGGCCAACAGACACATGAAAAAATGCTCAT

FIGURE 1, page 45 of 93

ATCATTTGGCCATCAGAGAAATGCAAAATCAAACCACAATGAGATACCATCTCACACCAGGTTAGAATGGTG
ATCATTAGAAAGTCAGGAAACGCAGAGGTGCTGGAGAGGATGTGGAGAAATAGGAACACTTTTACACTGTT
GGTGGGACCTGTAACCTGGTTCAACCATTGTGGAGACAGTGTGGCCAGTTCCTCAGGGATCTACAACGTAGA
AATACCATTTTGACCCAGCATCCCTACTTCTGGGTATATACCCAAAGGATTATAAATCATGCTGCTATAAA
GACACATGCACACGTATGTTTATTGCGGCACATATTCACAATAGCAAAAGACTTGGAAACACCTTAATATC
CACAACACATAGGCTAGATTGAAGAAAATGTGGCACAATATACACCATGGAATACTATGCAGCCATAAAAA
GGATAGAGTTCATATACTTTGTAGGGACATGGATGAAGCTGGAAAACCATCATTTCTCAGCAAACTATTGCCAA
GGACAAAAAACCAACACATGCATGCTTCTCACTCATAGGTGGGAATTGAACATAAGAACACATTTGGACACA
GGGTGGGGAACATTACACACTGGGGCCTGTTGTGGGTGGGGGGAGGGGGAGGATAGCATTAGAGAT
ATAACTAATGTAATGATGAGTTAATGGGTGCAGCACACCAACATGGGCACATGTATACATATGTAACAAA
CCTGCACATGTGCACATGTACCTCAGACTTAAAGTATAATAAAAAATATTAAAAAATCTACAGTCCC
TTTCTCAATAGTTAAACATATTAAACAATTTCTGAAAATTACATATGTACACACACACACACCCCA
ACATAGATATTTTGTTAACATACATTACCTTATGCTCTACACATTATCTGTGGCTAGCTTTTCTCATC
AATAATGTGTATTGGAGATCTTTCCATATAAGTACATATTGGTCTCACTCATTCAATTTTTAATGGCTGT
TATTAGTCCATAGTATGGAGTAATAATACCTTTTATGGCACAAGTTTTCAGTTGACAAAGGGTTTGC
ATATATTGTTTCTATTGGGTGTATAGCAGTCATCAACGGACATCAAGAATCCCAGAGGGTAACCTGG
GCTTCACCCAGGATCGCATGGAGCTTGGGACTCAAACAGCTAACATTCCTTAACAGGCCCATATTTCTGT
CAATTTAGTGCAGCTGCTACAACATTTAGGTAACTCTTTGAAAGCAGTAAAAAGATCACAATCTGGGA
CATCAAGAAGCCAGACGACAAGGAGACATAGACCTCAGGTGAGTGAGAAAAGAGATAATTGAAGTTTAG
AAGTGAATGGGCAGTAAACGAACACAGATCATCTCTCTTTCCCTTCCAGGATGAGGACCTGGGTGGCCCT
GTGGATGTTAAGTAGCATGTTTAGGCCACACAGCTGGATTGTTTTCTTTCTGTAGGCTAGCTCTGGAGAG
GGGAGGAAACGGAGATGCTAGATTTTTCCGGGCTCTCTTTTCTCATCAGCTAGAATGGGATGTGGATGGA
ATGCAGCTGTGAGAAGCCAAACCCCTTGGAAAATGAGAACTCTGCTTTCTGATGTGGGGCGCATCTCATC
TGAGATAACTCTCTCGTCAGCGCAGTATGACCATTTGCGACTTGGAGTGTGGTGGCGGAGGTGGTGTAG
ACCTTAAACCACCTCTGCTTTTGTGTACTGAATGTCTAATATTACACAGTTCTTTGTCTGAGTGCAGG
GCCAAAGCAGCAATAACGAAGAGCTGTGCCAACCATAGAAGTATGAAATGCTCCAGATCATCTACG
CTAGTTTGTAGTTAAATTTACCATGCAATAAATATAGAACAATTTCTCTTTATGCATAGATTGATTTTGT
TATTAAAAACCACTCTCTGAAGGTTTTATTCTATTCTATTATTTTATTGTTAGGAGAAATTTGTTATT
TAAGCTAAGAAAGTAGACTAGTAGTTATTTCTTTTTTTTGTCTATTATACCTTTACGTTTGGGGATACAT
GTGCAGGTGTAGTTACGTAGGTATACAGCTGCCATGGTGGTTTGTGTCACCCATCAACCTGTCTCTAAAT
TAGGTATTTCTTCTCATGTCTATCCCTTCCCTAGCCCCCACCCTCTGACAGGCCCAAGTGTGTGATGTTT
CCCTCCTGTGTCCATGTATTCTCATTGTTTACGCTCCCACTTATGAGCGAGAACATGCAGTGTGTTGGTTT
TCTGTTCTGTGTTAGTTTGTCTGAGAATGATGGTTTCCAGCTTCATCCATGCCCTATAAAGGCATGAT
TGCATCCTTTTTTATGGCTGCATAGTATTCATGGTGTATATGTGCCACATTTTCTTTATCCAGTCTATC
ATTGATGGGCATTGGGTGTGGTTTCAAGTCTTTTGCTATTGTGAATAGTCTGCAGTAAACATACGTGTGC
GTGTGTTTTTGAATAGAAGATTATTAATCCTTTGGGTATATACCCAGTAAATGGGATGGCTGGGTCAA
FACTAGAAGGCTACAGTAACCAAAACAGCATGGTACTGGTACCAAAACAGATATCTAGACACTGGAACA
GATCAGAGGCTCAGAAATAATGCTACACATGTACAACCTCTGATCTTTGATAAACCTGACAAAACAAG
CAATGGGGAAGGATTTCCCTATTATAAATGGTGTGGGAAACCTGACTAGCCATATGCAGAAAACCTGA
AAGTGAACCCCTCTCTTACCTTTATAAGAAATAAATCAAGATGGATTAAAGACTTAAATGTAAAGCT
TAAAACCATAAAACCTTAGAAGAAAACCTAGGCAATACAATTCAGGACATAGGCATGGGCAAGAGCTTC
ATGACTAAAATACCAAAGCAATGGCAACAAAAGCTATAATTGACAAATGGGATCTAATTAAACTAAAGA
ACAACCTGCACAGCAAAAGAACTATCATCAGATGAACAGGCAACCTACAGAAATGGGAGAAAATTTTGTG
AATCTATCCATCTCAAAAGAGGCTAATATCCAGAAATGTAAGGAACCTCAACAATTTACACACACACA
CACACACACACACACAAACAACCCCATCAAAAAGTGGGTGAAGGATATGAACAGACAGTTCTCAAAAG
AAGACATTTACATCTGCCAACACATAAATATGCTGCCAACAAAGCATATGAAAAAAGGCTCATCATCACTG
CTCAAGAGAAATGCAAAATCAAAACCAATGACATACATACTATCTACACCCAGTTAGAATTGGCAATTAAG
AAGTCAGGAACAAACAGATGCTAGAGGATGTGGGGAATGAGGAACGTTTTTACAGTTTGGTGGGAGT
GTAATTAGTTCAACCATTGTGGAAGACAGTGTGGCGATTCTCAAGGACCTACAATTAGTAGTTATTGTT
TAGGTTCTGACGGGCTGTCTTTTAGTTTGTCTTTCTTATCTGAGGTGGACTTAAACCAATTTTAAAAACAG
GGATGACTGAATTCGTGTTTAATCTTGTACTACAGGAACCTTTGACATGTATTGAGAAGCACCACAGG
GTTTGTTCATTAATCTGTTTTTATTGTTGCTATATTATTATTTTCACTTTTATTAAAAAACAGGG
TACATATGCAGGTTTGTACAAAGGTATATTGAGTGATGCTGAGGTCTGGCATATGGATGAATCTGTCTAC
TCAGGTATGATGAGCATAGTACCAATGATAGTTTTTGTACCAATGATAGTTTTTGTGTTTCTTTGTTTT
TTTTTGTGTTTTGTTTTTGTAGATGGAGTCTCGCTCTGTCAACCCAGGCTAGAGTGCAATGGCTGTATCT
CGGCTCAATGCAACCTCCGCTCCAGATTCAGCAATTTCTCTGCTCAGCCTCCCAAGTAGCTGGGAC
TACAGGCGTACACCACCATGCCCGCTAATTTTTGTATTTTATAGTAGAGATGGGGTTTTACCATATTGGC
CAGGCTGGTTTTGAACCTCTGACCTCAGGTGATCTGCCACCTCGGCTCCCAAGTGGTGGGATTACAG
CGCTCAGCCACTGTGCTCGGCCCAATAGATAGTTTTTCACTCTTCCCTGTTCTCCTCTCCCACTTC
TAGTTATCACCAGTGTCTATTGTTTTCTGCTTTTATGTTCTATGTGTTACCAAAATTTTAGCTCCCATTA
AGTGAGAACACATGGTATTTGGTTTTCTGTTTCTATGTTAGTTTGTCTAGATAGACCTCCAGCTGCATCC
ACGTTGTCTGCAATGACAGCATTTCAATCTTTTTTATGGCTGTGATATTCCGTGGTGTAGATATACCA
TATATTCTTTATCTAGGATAACTGATGGGCAATGGGTTGATTCCATGTCTTTGCTATTTTGATGTAGTGT
TCTGATGACCATAGGGTGATGTGTTTTCAATAGAACAAATTTATTTCACTACTCTTATCAGGATAC
CTGGGAGGAACCTTCTCTACGAAGTTAATTTGGGGGGACTCTGAAAGATGAGTGAAACCCCTTATTAAGC
ACTTAGAGGCTCGAAAGGTGACAAGGGAACGTTCAAGTGTGACAGCTTGAGAGACATGTCATATCCACCC
CCACACAGAGCTTAGTGAACCGCTCTTTCTATTTTCTCCAAAGACCAAAATGGCCAGAAATTTGGAA
GATGAAAAATGGACTTATTTATGAGTCTGGGAAGGAGGCGAGTAAAGCAGTCTGTGTTACGGGTCTGTA
GTTTTACCTCTTGCTCTGATTGCGAGATCATTTTCTCTTCTGCTTCTTACGCTTAGGACAAGAACA
GTTTGGAAATTTGTTCTACTACTTTTGGACACCATAGTTTATGATTTCAAAATAGTACAAGTGGGAGGAAG
CTTGATAATTTCTGGAATAATCGAACAGAGTAGAAGGAGGGGCTACAGGTGAGCTGAATGCTGCA
TGGCATTGAAGTAAATCACACCGAGTGCACAAATCTCTCTCTTGTAGGTTATCTGTTGTGCTCCAGAG

FIGURE 1, page 46 of 93

47/139

AACAATTCAGAAAGTCCTTTCTGGACTGTAGAATAGCACTTGCTTATTTGATGAGCCCTGAGAAGCAT
TACTGAAAGCGGTTTCATTGTCCCTGAGGTATTACAATGAGATGGTGGTCACTGATTTTCATTATGTTTTCC
TTTATTGCAAGCTGTTGGTTTATCCTTTGCCAGGTGCTTAAACAATTGTGGTTTTGCAGATGGTAAGTT
AGAGGTTGGACAAAAAAGGGATCATGTCACTGCCCTGGCCAAAAATTCACAGACTGGGGTCTAGTGAG
GGCAATAGATAGAGGCTTTCCTCTTCACCTTTGTGTTATTTAGAAAAAGAACTTTCCAGGACAAATTC
TTTCCTAGAATTCCTTTTTTAAAAATTTTTTTCTTTGAAAATTTACTTAGATGCAAATAATATATTTTT
CTTCCTTTTAAATAATAAAGTAAGATGTCTCTTGGAGGTGGTGGTGTCACTGACAGATTAACTAGAA
CTGACTAGCTGTAAAAATATAATTTGGGATGCATTATTAAGGCATGCCATTTTATTGTCATGCCATTGT
GTACAGATGTGGTGTGAATAGTTCAAATCATGGCACATTGAATGTCTCACTGGATTTTTAGGAATGT
GTTCACTGAGACAGCCAAATCCTATTTCATTTTCTTTGGCTCATTGCATTGGCTGTAAATTGGAGATATT
CACTTTAATATGTGAGTCAAAATTTATTTCCAAACATAACTGCACTTGTCTGTACAGAAATATAAT
TTCTTATTTATTTCCCTTAATACGTTGCTTTCTACTTTTCTTTTTTCTTTATTTTATTTCTGGAGTATGT
GGAAAGGTTTTCCAGAAAGATTTGCTAATGCTAATCTACTGATGAATACTTTTTTGGGTTACTCTTT
CATATTTTGGGAGATATACTATGGAAGTGTAGGAATCATGGGTCTGGAATAGTTTTATTACTGCTT
CTGAAATGCCCTCCAATGATACCATATAGTAATCCATCAGGGAATAATTTTTATTATAGTTTAAAA
TATAACTTAATATTTAGGTGCTCTTGTTCAGTCACTGTCAGTTCTTTTTATTTTCCAAACCTTACCATG
GCCTCCTGAAAGACTTGTGAATGCGACAGACCTGGATTTAATCATGGCTTGGCCATCTGCTAGCCAAGA
GAACCTGAACAAGTGAGTCAACTTCTTGGAGTCTCATTTTCTGCTTCTGTAACATGGGAACAGGGTAAT
CTAATCATTTGCTTGTGATGATTAGATGAGGCAAAATGCTGAGTTACCTAGCCAGCACCTGGTCCATG
GGAAGCATGTGGGTCTGCTGCTACCCAGTCTTGGCCAGTGCATGGTGCACAGAAGGGAATCTGAACA
GGCCAACTTTATTCCTATTCTTGACCCACCCCATGTAGATGCTTCTACATCTTCAGCTTCTCTTCTTC
TTCTTTTTTTTTTAAAGCAGGGTCTCACTCTGTCCCCAGGCTGAAGTGCAGTGGCACAACCACAGCTC
AGGGCAACCTCGACCTCCTAGGATCAAGTATCCTCCACCTCAGCTCCTGAGTAACCTGGGATGACAGG
ACCACATACCACACTTGGCTAATTTAAAACTTTTGTAGAGCTGGGGTCTTGCTATGTTGCCAGGCTG
GTCTCAACTTCTGGATTCAAGTGATGCCCTCAGCTCAGCTCCTCAAGTGCCTGGAAAACAGGCTCCA
CAGCCAGCTTCAACTTCATTTTAAAAATTTGTGGTAACTATACAATTCATCCATGAAAGCAGAAACCA
CTTGACCCCAAGCTATGAAATTTAAAAATATATATATAAAAAATAAAATTAATTTGTGATAAGAT
ATACATAATATGAATTTACTACTTTAATCATTTTTAAGTGTACGGTTCAGTGGCATGTAGTACATTCAC
ATTTTGTGCAACCGGAACCTTTTCATCCTCCCAAGTGAAGCTCTGACTTATTTTTATTTTATTTTAT
TTTTTGAGATGGAGTTTCACTCTAGTCTGCCCAGGCTGGAGTGCAGTGGTGCATCTCGGCTCACTGCAAC
CTCTGCTTCTGGGTTCAAGAGATTTCTCTGCTCAGCTCCTCAAGTAGCTGGGATTACAGGTGCCACC
ACCACACCCAGCTAAGTTTTGTATTTTTAGTAGAGACGGGGTTTTGCTATGTTGGGCAGGCTGGTCTCT
AATCCTGATCTCAGGTGATCTGCCGCTCAGCTCCTCAAAATGCTGGGATTACAGGCATGAGCCACTG
TGCCCGGCCAGCTCTGTGCTCATTTAAACAATGACTCCAAGTTCCTTCCCATCTCTCTGCTGACCTC
TCTTCTACTTTCTGTCTCTGTGAGTTTAACTATTCTAGGTACGTCAATGAAGTGCATCTATGTGATATTT
GTCTTTTGTGCTCTGGCTTATTTCACTTAGCATAATGTCTTCATGATTCAATCATGTTGTAGCATGTGTC
AGAGTTTCTCTCTTTTAAAGGCTGAATAATACTCCACTGTATGGATAGACCACACTTTATTTATCCATT
TGTCTGTGATGGATTTGGATGATTTCCATCTTGTGGGTATAGTGAATTTTGTCTATGAACATGGG
TATAAAATATCTATTTGAGTTTCTGCTTTCAATTTTTTGGGTCTACACCTCAAAGCGGAATTTGTGGA
AGTGGAAATGCTTTCCACTTGTGGAAGTGAACATGGTCTCCCACTTCATTTTGACACAACCTTCCAGC
TTCAGAACTGTATTTACAACAGCGTGTGGGAGGTGCTTTGAGTTTATGACGGAAATCTCATATCAACA
GTTTTAAATTTGTTCAATGACTTCTTGCCACCCCTGTCCCAATTCAGATCTTTTTTTTGTATTAAGGT
ATGAACAATTTTCAAATATCCTGGCACAATCTATTAGAATATTTGACTTTCTCCTCCTCCTCCTTTAG
CCCTAATCTATTTGGCAAGCTGTTGAAAACCTTCTTCACATCTTCTCTGCTCATCTACTTGTCTACTC
AAAGATGATTAGTAGATGTTTGGTATGATTTTTTTCTTGGCATAACTGTGAATACTTTTAACTCCTC
ATGTTTTATGCAATCATACATTCCCACTTTTGTGTAAAACATTTGAATTTCTTCTTCTATAACAAGT
TCTTTGCCAGTCTTCTTTTCTTTTGTCTTTAGTGAGTTCCAATGATATCATTGTTTGAACCTGTTTTC
TAATTCATGCTGCTATTTCCCATACTCCTCTTTGCTTTGTTACAGTAGATAATGTGGGTGGTCTTACC
AAGACAAAGCATCACTCAGGAGTCAAGGGCTGGGGTAGATACAGACACTAGGTACTGCAGAAAGTCAATA
TCTTTCTCAGAGTGTAAAGCAGGACAAGACTTCTGTTCCCTGTACCGTTGTGGCTGGGGAGTTGGACTG
TGCATTTTCATCCTTGTCTATATAAGTCAAAGTATTGCCCAAATAACTTAATTTGGTGTGGTCTTAGTAAG
TATTTGTCTCGTAGATATGTTAAATAGAAGACAGTAACATGGGTGGCTGTGTTAATTCCTCACTTTTT
CTTTCTATACATGAGCTTCTAAGAAGCGGAACACTTGGTGGTGCAGAGTTGCAGAGATTCTTGCAT
GATTGCAATCTGGAAAGTAGATACCATTCTTGAATGAAGAGCTTGCCCTTGGAGAAGCTGGGCTTTCCA
TATATGGAGGTTGTTAGAATGCATAAGAGTTCAGCTTCTGGAATGAAAGGAGACCTTGGTTCAAAACCCA
TCTGCCACTTGCTTGCTGTGTGGCTTAAATCAGGCTTTTAACTTCAATTAATTTGCTCTGTATAA
TAGGATTAATATAATTCCTTCTCATAAAGTTCCTAGGGGTTAAATGAACAATCAATGTATAACACAC
TTCTCTGCATGTGATGTTTCAGTACCTAGAAGACTCGGTTTCTTGGTAGAGAGAAATTTGGCTAGACAA
GCTTATGGAATTACCCCGAGATAGGAAGTGAGCACAAAGTGTGAATGAACAGCCAGAGCAGGAACGGCT
CTTGGAAGCGTCACTCAGGCTGGGCTGCTGGTTTATATAACAGTGTCTTGAATTTACAGTGCAG
ATTCTTACTATTTTCCCAATGTTACAGTCAAACTATGTTGTCTGTACCTTAACACCTAAAGGATAAT
ATAGTCTTTCACCTGATAAACTAAAATGTCATAGGTTTTCTTTGGCCAAATATGTATAGAACTTGTGA
TTTCACATCAGATTTAAAGCTGTATTTAACTCTATGAAACACTACTGATGCTTAGAAGTAGAAAGGAA
GTCAGATTTTGACATCTTACTTGTCAACTTAAATATTTATAGTTCCTGGATGCTTCAAAATGTGATAAA
CCATAGTTAATTTATGTAATATTCGATGAGTGCCCTTAAAGGAGACTGTAAAGGTAGCCAAGCTTT
ATATATGTTAGTACATTTATGGGTCAATCGGGTATAAAAAATAGGACTTCGAAAATAAAATATTTATTT
GTCGGACTCTTCAATAGGCTTTTTCGAGGATTAGCTAAAATTTGGCTCTTATTGATGTGTGAGTGCT
TAAACATTTGAGAATTCATTTTTCTTTTGAATTCATTTTTATTTCTGAGCCTTAAATATGAACAGTTA
GCTAAATGTTTGTATATGTTAAGGAATGCTAAGTGTATTCTCTTAATGGGACGACACCTTTTCCCG
GTTTACATACTTGCTTTTAACTAACCCTATGAAAGTCTCCTTGACTTAAATTTTTTTCAGAGTACT
GTATATCTCTTTAGGGAATGCATTTATTTAAAAATATATAAGCAAGAAATAGATGTGATATATTTGAAG
TTTTCTAGTCACAAATTAATCCCTAGATGTGTGTAGTTTGTGGAGCACTTTGAATGTGCCAATTCAA

FIGURE 1, page 47 of 93

48/139

GATGGAAATAGCAGGAAAGAACCATTCAGTACGATTTCTGACTCCATAAAGTTAGGAAGTTATGATAAA
GGAAAAATAACTACACCACATACTTATGGCAGAGAATTGCATTATTGGGACAAATTGATCTTCAAATTTG
TAGGCTATGATGGAGCAATATTTGTAGTATCTTAATATTCAACTGTTAAGCCAGGAGACGAGTACTCT
GAACCTTCAGCTTCTCAATAAATCAGTCAGTTACATGACAGTTTATGTAGTTTATATGTAAGAAACCCCTT
GATCAAGATATGCCCTTTTCTTCAGCCTTGTTAATACTTCAATTTATAAGGATTTTATTTCTAGGAAATA
ATACCATAGACCTATTTTATTAAAGCTAAAGTGTTTCTGGTGATGGTGGTGAATGGGGAGATGATTCA
AGGAAACGCTAATCTTGTAGAGTTTAGTAAATCTTGAATAGAAATTTAAAAAGTTAAAAACACACTA
TGAAACAAATCATTATTAGTAAATGAACCATATTAATGTCTCCATAACCAACGTATTATAGCAGGG
GAAATGGCATTTTAATTCAGAAAAACATTTCTATATAAAACAAGCTTGGGAATAATTGAAATATGTTGA
TTTTTCTTTGGGGCAATCATGAAATACAGTCATATTAGGAAAGAGGCAAGGCTCAAACCGGAAAGAGTA
GTGAGGATAATTATGAGCAATGCGTGGCTTCATGGATCCCTTCTGGCCCTCTTCATCTATGAACATCT
GCTTATGTTTCATGCTGGCCTCACCCAGTGCTGAAGAGCAGACTGCCCTGCTTAGAACCAAGCCTTGT
TCTGTGGATTGTAGTTTGGGGTCTGAGGTAGAATGGCCATCATATTGTTCAAGGTCCTCACCTTCCC
ACTCATTACTTCTTTATAGAACCCAGTCATCCCTCAGGAGGCTGCGCTCCACAAATGAAGTTGGG
GGTGAGGGGAGCTTTAGCATCTCAGTATTGTTTCAGATATTGGATACTTGTGAGCTCCACTATGTGTGTG
AGAATGCGCTGGGCTCAGGATCAATAGCCATAAATGAGACAGATATGGCCCATCCCTTGCCATGCCATAA
CTGATCTGGGCATTGAGACAAGCAGTTAAACCCCAACATAGTAAGTCTATGATGAGACACAACTAAGC
ATGGCTGGAAGGGCAGATAAGATTTACAGAGGAACCTGACATCTTGACTGGCAGACTTAGAAGATGAGTA
GGAGTCAGTTGGGCCAAGAGGAGAAAAAGTGTTTCCATGAAGAAGAAGAGCATGTGCCAAGTCTGGG
GGTGAGAAGCATGGCATGTGTCAACAGAAAGACATGATCAGAGCTTGGATGGGAGTTAGAGCGGGGAGAG
AAGGCAAGGAAAAACATAAGAGCTTTCGAACTGTGAAGGCATTGCATTTAGATGTCAATTTTAGAGCTT
GGAGGAGCCTCAGGACATTGAGGAGGATAGTGGCCTGATGGCGTATGATTTTAGGAAAAATCAGTGTGG
CCACCTGTGGGGAAGGATTGGCGGGGAAGGCTGGAGGCAAGGGTCTGCGGTGGGCTGTGGTAATGA
TCTGGGCTGGAGAGGTATGGTGTGCCAGCGCAAAATTTGGTTTCGCTTTGAAAAATAATTAGAAAAATA
TTGTTTTGATCTGTGTGCTGTGGTGGGAGGTGGGAGGAGGGTCAAGTGAGGAAGGAGATTGAATCT
AGAATAATGCCCCCTTTTTCAGGCTTCACGTGCAGACATTTCTTGGTTTCAGCTGGGAAGTGAATGAACA
GACTGGCGAGGAAAGAAGACAGTCGTGCTGTCTGGGGCACATCCATCTTGACGAGTGTGAGAGAGT
CAAGTCTTGATGACAGGGGCGAGTGGACATTACAGGAACTCAGGAAAGAGATTTGATCTGAAGTGACCA
CCAGAAATACTGACGGAAGAGGTGACAAAAGGAGAGACCTGCAATATTATATTGGCTTCTCTCAGG
CAACTGCTTGGCCTGTCTTATATTCCTTTGAATCTCTGCATATGTACGGGCCATTATTTATTTTCACA
ACTAACAAATGCAGACTTTCTGTGAATGACAACAAAGCCAAACCAGCTGCTACCAAGGAGGGAATAATC
AGAAGAGAAGGAAAAAGAACAAAGGGAAGCTTGGGAAAAAGCTGAATGTGGTCTCTTCTGTGTGCAGGG
GCTGGGGTGGGCCCGGTGATTCTTACTGAGAGGCGTTTTCTCTCCCGCTTCTGTCTTTCTGGTTCAT
CTCATTCACCTCTGCTCCCTCCCTTCTGCCAGTCAACCTTAGATTCTCTCAGAGGCTTTTTATTTT
TATCTTTTGTAGGGCAAGAAAATAGTGGGATTATTTTTCCAAACCTTCACTGAACATCACATCGTGGC
TTTGGCCCTATGGGCTTGGTTCATCCGGGCTGCACAGAAGGACTTTTCCGGCCAGTCTGGTCACATACA
TCGAGTCTGTCTTTTTCAGTTAAAAAAAACACACACACACACTGCTATGTTTCACTAAGACAACCTGG
TGTGAGTTGTTTTTATGAAAAATCACTTACTTACAGTAAGATTTTCTCAAGCATTATCTTGAGAAGACCA
GATAATAAAATTTAAAAAGAATTTCTTCTTTTTTTTTTATATCTTAAAGTTTGGGTACATGTGCAC
ATTGTGAGGTTAGTTACATATGTATACATGTGCCATGCTGGTGAAGTGCACCCACTAAGTCTCATCTA
GCATTAGGTATATCTCCCGATGCTATCTTAATGCAACTTAAATCAATTGCTTTAATAACACATATTGACC
AAGTTACACTCATTAAGGAAAAAACTACTTTGTTGTTTTCTTCTCTGACGTGAGCTGAAGACTTAG
AAATAGTTGTTAATAGTTTGGTTAATAAGAAATTTGTTTAAATGTCATATATCAAAATATGATTATTA
AACTTTTCTTTTGTGCTTATCAATTTAGCTTTGTGACAAAAGGTTTGCCGTATGAACATGATTCTG
TTGTACATCTATTTCCATTTTTGTTAAGAGACGAATTCATTTGTAATAAATCTAGTACCTTTTATTCTTA
AACATGTTAGTTTCAGGAATTTCACTTGGTTCTACAAAGATACATATCTACAGTGGATGGCCAGTGCAAA
ATGAGACTCAGCCAGCTGCTGCTGACCCAATTGACGTTCTCTGCTTCTTCTGCTTACAAAGTAACTG
GCTCTGGGGAGAAAGTGAGTCAAAGTAATATTTGGTTTGAATGGTTATTGACTATTTTCTTCTGAACTT
AATGTATACTAATTAATTTTTTATTTTATTTCTTTTTTTTTTAGAGATAGGGTCTCGCTCTGTTGTCCATG
CTGGAGTGCAGTGGTGTATACAGCTCACTGACGCTTACCTCTGGGCTCAAGCGATTCTCTGTCT
CAGCCTCCGAGTACTAGGATTACAGGCATGTGCCATCATGCCAGGCTAATATTAAATTTTTTTTTTTT
GTAGAGACAAGATATTGTTATGTTGCCAGGCTGGTCTAAAACCTCTGGTCTCAAACATATCCTCCACCT
CAGCTTCTGAACTACTGGAATATAGGCATGAGCTGCCACACCTGGCCATATACTCATTTTTTGTAAA
AGCTGAAATATATCAGCATATACTGCATAAATACCACAGGAGACTAAACACTGAAAGTTTCTTTAGGGTA
TCAGAAGAATACACTTTTTGCTTGCAGTTAGCATCTGCACAGATAAGTTTGTGTTCTGGTCTATTACTT
CTTCAGTTTGACCTTATTAATAAGGACAATTTCTAAAAATAAATACTGTGTCTGGATATCTGAATCCGTGT
GTGGTCTTTTACTGAAGTTACAGGTTTATAACTCTGCTGACTAGTTTGTGTTTCTGTATGCAATAGA
AGAGTGCAATGTATATTTGATCTGAAGCCGCTGTATACAGTGAATTTTATAATGTATATTAAAGATGG
AAAGCGAAGTTTATAGGGCCAGCATTCTTGTCAAGTCTCACTCCACCTCTCTAATTTGGGCTGAC
CCTTAAGTTGAATAAAGAACAAAGAGCTCTGTAGTTAAACATTTCACTGCACTTGCATCTTGCCCTTA
GTAATGGAAAAAATAGAGACTTAAGCAGAGATCTGAAGTGGGTGTGAATATATATTCAAGTTTGG
GGTGGGAGAATGAGAACCATTGTTTACAAATAGTATACATAACTTCTTCTAGTCTAATATCAGGACATTTCC
CCAAGATATGTAAAGAAATTAGACTTATGCAGACAGACTTTATAAAAACATGCCAATATTATTAGTTTGT
GAATTTAATATTCTGCTCCCTATAAACCAATTTATTTTGGGATAAAGGGATGGAGTGACTTCTAA
ATCTTAGAGCAGAACTTCTGTGGGAGCTGGACATATGTACCAGGAGCTCAGAGAAGAGGGTTGTGTT
GGGAGCGTACATTCTGAGTGATCTGCATTTGGTGATGATGGAAGCCATGGACATGCACTAGATTGTCTTG
TGGGAGAATATGGAGTAGTAAGAGAAGAAGAACCTAGGATTGAGCCCTGAGCACCTCTGGCTTAATGT
TGGATGGAGGAAATTGAATCTGTAAACAAATACCGGGAGGCTGACGCTGAGAGGCAGAAAGGAAGTGGGGT
GTTTGGGATTATGGAAGCCAAGGGAAGGCTGTCTCACAGCGGGAAGGGAGGTATCAACATTGTAAGC
TGCTTCAGATAGGTTATGTAGGATGTGACTGAAAAATACCTGTAATAATTTGGCAACGCGATTCAATGGT
AATCCTAGGGAAGTTGCTTTTGGGGTAACTAAGGTGGAACAGATTGGTGTGGGTGAGCAATGCAAG
GAGAGGTGAAGAAAAGGAGATTTCATGTCAGACGTTTCTGAGTTTCAGCTGGGAACAAGGATAGATAG

FIGURE 1, page 48 of 93

49/139

AAGATGGAAGTTAGAGAGCATGTGGGGCAAGGGAGACTCTTTTATGGGACAGTCTCGCATGTGATCAAAG
CCATAGAGTAAGGAGCATTTTGGGGAGAGAGTCAATCAACAAGAGAGAAAAGAGGGTTCATCAT
AAAATAACGGTAACAACAACGAACATCTTTTGTAGTGTTCCTATATCCGGGGAACATAGGTAACTCCTA
ACCTGCATTCTCACATTCATTTCTTAGAATCGTTGGATGTGGTGGGTTCCATGATTTCCTCTAGATTAGC
GAGGAGGAAAGAGAGATCTAGAAATGTCAGGTAGCTTGCTCAGAGTTCTCCAGGTAGTCAGTCATGGACT
AATTTGTGAAGTGAAGGACTGAACCTCGTCAACCCAGCCACCAAGCCGGCTTGACTTTAGGTATTCT
GTGCTGCATGTGAGTACCGACTTAAATTATATTTTAAAGAGGGCTACTTTGAAACTCTCTCTCGAAAC
TCTATTCTTCAAAAGCTCTACCCCTACAACAATTTTGGCAAGCAGTCTTGGTAAAACCAAAACCAAA
CCAAAACCAAAAACCTTATCTGCTGAGAAAATATAACACATATAAATATGGTGCTACAAAATATAGACT
GTGTGAAGTGAAGGTGACTTGCCCAAGGACTCCTGAAGCAATTGGCTGCTGTAGAAATTAAGTCCACGG
GAGGTTTTTGTTCGTGTTTTTTTTTTTTTTTTTGTAGATGGATTCTCACTCTGTTGCCCTAGGCTGGAGT
GCAGTGGCGCAATCTCGGCTCACTGCAACCTCCGCCCTCCGGGTTCAAGCGATTCTCCTGCCCTCAGCTTC
CTGAGTCTGAGTGGGATTACAGGTGTACACCACCATACCCAGGTTTTTTTGTATTTTTAGTAGAGACGGGG
TTTCACCATGTTGGTCAAGGCTGGTCTTGAACCTCTGACGTCGTGATCCACCTGCCTCGGCCTCCCAAAGT
TCTGGGATTACAGGCATGAGCCACCGTGCCCGGCCATGAGAGGTTTGTGTTGCACCTCAAGAAGGACAG
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GCCTGCCGGCTCCGTAAATGCTACGAAGTGGGAATGATGAAGGTGGTAGGTACATCTCTCCAGGGGCC
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50/139

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TTTGCAATTTCTGTGCTATCAGTTGTAATGTCTCTCTTTTATTTCTGATTCAGTTTATTTGTGCTCTCT

FIGURE 1, page 50 of 93

51/139

ACTTTTTTCTTAGTCTAGTTAAAGGTTAATCAATTTTGTTTATCTTTTTAAAAACAATTCGTAGTTTC
ACTGATCTTTTGTTTTGTGTTTTAGTCTCAATTTTATTTATTTTCTCCCGATCTTTATTTATTTTCTTC
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52/139

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GTAAAGATCTGTTAAGTCAATTTGTTCCAGGGTACAATTTAAATCCATTGTTTCTTGTGACTTCTG
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TCATTACTTAGGTTAGTAGTAATTTGTTCTATACATTTGGGAGTTCCAGTGTTAGGTGCATATATATTTA
GGATTATGGTATTTTCTTTTGGACAAGGCCCTTTATCATTATATAATGCTCTTCTTGTCTTTTTTAAAC
TGCTGTTGTTTAAAGTTTTTGTGTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGTTG
GCATGGAATGTCTTTTCCACACCCTTACCTTAAGTTTATGTGAGTCCCTTATGTGTTAGGTGAGTTTCTT
GAAGGCAGCAGATCTTGGTTGGTGATTGCTTATCCATTCTGCAATCTGTATCTTTAAGTGGAGCATT
TAGGCTATTTAAATTCATGTTAGTATTGAGATGTGAGGTACTATCTGTTTCATCATGCCATTTGTTGCC
TGATACCTTGGATTTTTTGTAGTAGTATTTTGTGTTTATACCTCCAATGAGATTTACACATTAAGGAG
TTCTGTTTTGATGTGTTTCCAGCATTGTTTCAAGATTGAGGCTCCTTTTAGCAGTTCTGTAGTATG
TAGTGCTGGCTTGTAGTGGCAATCTCTTAGCGTTGTTTTATCTGAAAAGACTGTATCTGTCTCTC
ATTTAAGAAGCTTAGTTTTGCTGGATACAAAATCTTGGCTGCTAATGTTTCTTTAAAGAAGCTGAAG
ATAGGGCCCCAATCCCTCTAGTTTATAGGTTTCTGCTGAGAAATCTGTTAACTTGATGGGTTTTCTT
TATAGGTTACCTGGTGCTTTTGCCTCACAGCTCTTAAGATTATTTTCTTATCTTAACCTTATAGTAACCT
TATGACAATGTGCCTAGGCAATGATCTTTTGTGATGAATTTTTCAGGTGTTATTTGAGCTTCTGTATT
TGGATGTCTAGGCTCTAATAAGGCTAAGGAAGTTTTCTCAATATATCCCCCAGATATGTTTTCCAAAC
TTTTAGATTTCTCTCTTTCTCAGGAACCAATATTCTTAGGTTTGGTTGTTTAAATCTGTCTCCAAAC
TTCTTGGAGGTTTTGTTTCAATTTTTTTTTTTTTTTTTTTTTTTTTTAAATGATCATTTCTTGGGT
GTTTCTCGCAGAGGGGGATTGTCAGGATCACAGGACAATAGTGGAGGGAAGGTGACAGATAAACAAGT
GCACAAAGGTCTCTGGTTTTCTAGGAGAGGACCTGCGGCTTCTGCAGTTTTTGTGTCCCTGGGTAC
TTGAGATTAGGAGTGGTGATGACTCTTAACGAGCATGCTGCCTTCAAGCATCTGTTTAAACAAGCAGAT
CTTGACCGCCCTTAATCCATTACACCTGAGTGGATACACCATGTTTTCAGAGAGCACAGGGGTTGGG
GTAAGGTCACAGATCAACAGGATCCCAAGGCAGAGAATTTTTCTTAGTACAGAACAAAATGAAAAGTCT
CCCACGCTACCTCTTTCTACACAGACACGGCAACCATCCGATTTCTCAATCTTTTCCCCACCTTTCCCC
CCTTTCTATTCCACAAAACGCAATGTCATCATGGCCCGTTCTCAATGAGCTGTTGGGCACACCTCCCCA
GACGGGTTGGTGGCCGGGAGAGCGGCTCCTCACTTCCAGTAGGGGCGGCGGGGAGAGGCGGCGGCTCA
CCTCCCGGACGGGGCGGCTGGCCAGGCGGGGGCTGAACCCCCACCTCCCTCCCGGACGGGGCGGCTGGC
CGGGCAGAGGGGCTCCTCACTTCCAGTAGGGGCGGCTGGGCAGAGGCGCCCTCACTCCCGGACTGGG
CAGCTGGCCAGGCGGGGGCTGACCCCCACCTCCCTCCCGGACGGGGCGGCTGGCCGGGCGGGGGCT
GACCCCCACCTCCCGGACGGGCGGCTGGCCGGGCGGGGAGCTGACCCCCACCTCCCTCCCGG
GACGGGGTGGCTGCCGGGCGGAGACGCTCCTCACTTCCAGACGGGGTGGCTGCCGGGCTGAGGGGCTCC
TCACTTCTCAGACAGGGCGGTTGCCAGGAGAGGGTCTCCTCACTTCTCAGACGGGCGGCGGCGGAGAG
ACGCTCAGCTCACATCCAGACGGGGCGGACAGGCGAGAGGCGCTCCCACTCTCAGACGATGGGCGGAGG
GCAGACGCTCCTCACTTCTAGATGGGATGGCGGCGGGAAGAGGCGCTCCTCACTTCTCAGATGGGA
TGGCGGCTGGGAGAGACACTCCTCACTTTCCAGACTGGGAGGCGGAGGAGGCTCCTCACTATCCCA

FIGURE 1, page 52 of 93

53/139

GACGATGGCGGCCAGGCAGAGACGCTCCTCACTTCCCAGACGGGGTGGCCCCGGGCAGAGGCTGCAATCT
CGGCACTTTGGGAGGCCAAGGCAGGCTGCTGGGAGGTGGAGGTTGTAGCGAGCTGAGATCACGCCACTGC
ACTCCAGCCTGGGCACCATTGAGCACTGAGTGCGGTTTTGTTCAATTTTAAATTCCTTTTCTTTGCTCT
TTGTTGGATTGAGTTAATTTGAAACCTTGCTTTGAGCTCTGAAGTTCTTTCTTATGCTTGTATTATTC
TATTGCTGAGACTTTCAAGAACATTTGCATTTCTCTAAGTGTGTCTTCAATTCCTGAAGTTGTGATTG
TTTTTTATTATATACTAACTATTTCACTGAAGATTTCTCCCTCATTTCTGTATCATTTTTTTGACTTCC
TTAAATTGGACTTCACCTTTCTCTGGTGCTCTTAATTAGCTTAACAATCGACCTTCTGAATTCCTTTT
CAGGTGACTCAGGATTTCTTCTGGCTTGATCCATTGCTGGTGAGCTAGTGTGATTTTTTGAGGGGTA
TTAAGAACCTTGTGTTGCTGATTACTGGGATTGTTTTCTGGTTCTTCTCATTTGGTAGGCTATGTC
TGAGGGAAGTACTAGGCTCAAGGCTGCTGTTCAAGATTCTTTGTCCACAGGTTGTTTTCTGTATGTAG
TACTCTCCCTTTCTTAGAGATGTGGCTTCTGGGAACCGACCTGAGTGACTGTATTTCTCTTCTG
GATCTAGCCATTCAAGAGGCTACAGGCTCCAGGCTAGTACTGGGGGCTGTCTGCTCAGAGTCTGTGTC
TATGGGCTTTTTAGGCTCTCAGAGCTTGAGTTCCAGCACCTGCTGTATAGAGGTGGCAGGGAGTGA
AATGGACTCTGCAGGGGCTCTAGCTTTGTTGTTAATGCATATTTTTGTGCTGGTTGGCCTCCTGCC
AGGAGGTGGCACTTTCAAGACAGCGCTCAGCTGTGGTAGTATAGGGAGGATCAGGCAGTGGCCAGGGCCTT
AGAACTCCCAAGAGTATATGACCTTTGCCTTCAGCTACAGGATGGATAGGGAATGACCATCAGGTGGGG
CAAGGCTAGGACTCTGAGCTCAGACTCTCCTCGGGTAGTCTTGTGAGGCTGTGCTGTGGGGCAGGG
GGGTGAGGTTCCCAGGTCAATGGAGTTATGTTCCCAGAGGATTATGGCTGCCCTGTGCTGCGTATGCAGG
CTGTCAAGGAATGTGGGGGAAGCCGCGAGTTACAGGCTCACCCAGCTCCCTTGCAACCCCCAAAACCGG
TCTCACTCCTGTGCCCTACCAACAGCATCAAGTTTGTGTTGAGGCAGCGGATGAGCAAGGCTAAGAATCT
CCGCGAGGCTACCCAGCCTCCAGCAAGAAATGTAAGTAGGGCTTTCATGCCCTCCCTTCTGTTGAATCTG
TACACCAAAATCACTCCCTCCCCCAAGTTCTGGCCAGGTGACTTCATGTTTGGTTGGAATTTGTACAAAG
TTCAGCTGGAGGTTTCTTCTCGCTGTGGTCTTTTCCAGTTCCTCTGGCCACCTCCCCAAGGACCCCT
GTGAGACAAGGTAGAAATGGCTTATAGGGGACCCAGAGAGCCACAGGGCTTTTCCCTTCTCTTCTCT
ACCTTTTATTTCACTCAGCTGTCTAATTAATCAGCTCCAGGTAAGTTTCATATCCTTCTCCCATGATCTG
GAGCTGCAGATTCCCCAGTGAGGGTGTGTGTTCCGGGGGTGGGCTATCCCCCTTCTTCTTCTTCAAGCTT
GGGCACTCAGATATTTGGGGTGTCTCCTGGGCTCTGTAGGAGCAAACTGCTTCTTCAAGGGTCTGTG
GATTCTCTTGGCTTCTCTGTTATTTCTGTAGTAGTCTGGAGCAGAAGTTATGGTGTGAGTTTCCAC
ACACTGCTCTGTTCACTCAAGTGAGAGCTGCAATCTAGTCTGCTTCTTCCACCATTTTTTGGCCCTTG
ACGTATTACATTTTATGTTTGAAGTTTGGCAGTTTTATTTTGAATAATTTACATAACAAATGCCA
AGCCAAATCCAACTTCTTGGCTTAAATCATTTACAGATAACCTTTACTGAGCATTTACTACATGAAGGT
GTTGTTGACACAGGGGATTAAAGATGTGATCACTGACCACAACATCCAGGCAACCTAAAAGTGAAAGAG
GTCATTACAAAAAATAGGACCAAACTTCTCCTCAATTCCTCAAGGGACCTAGGACTGGAGTTGGCCTAAAA
ATTCCTGTATCTACCTCACCCACAGTTTGTGCTCTCAGGATCAAGGAAGCTCAAGGTTTCT
GGCCCTTTTGGCTCATGTTCTTGGAGGTATATTTCTATTGTCAAGTTAAAGTCGTACCCATCCTAGATCTG
TTTCTCTCTCTTTGTGGTTCCAGTCTCATAGAAAACATAACTATGTGAAAACACCACTACCCCATAAAG
CTATTCTGAGACTCAAAGCATGAACCTTATTTTATAATCACAATTTGATGTATAGATGTGAGATATCA
TTCAATTTATATAGTACATTTGTGTTTAAAGTCTTAGCTGTGGAATCAGACTACTGCAATTTTAAATTTA
GCTCTGTTGATAGGTGTGTAACCTTGAACAAGATACGTAACCTCTTCAAGCTTTTGTCTCTTTGTTGTC
AAATAACGACAATAATAATACTAATTAAGTATGTATAAGGAGGATGTAAGCTTCTATTGTATTT
GGCTTATGGTGAGCCCTTCATATAAATTTGGTTACAATGGGTAATGAAAAGTACGTTCAATTTTCCACA
AGGATTTAGTCTAATCTAATAAATAAATGCCAGTTTATAGTATACCTGTCATATTATAAGGAACTATAAT
TCTTAAGTAATTAATTAATTTGGTTCCCTTTGGATAATTAGTGATACATAAATGCAGTACCTTGCCTG
AGGAACCTACAAGTTAGCTCCCTCTAATCCTGGCATTCAAAGTCTCCACCTTCCGAATTACACCTGTT
TTTTCAGGCATTGTCTCCCACTTCTTAGCAAGCCTTTGGCTCCAGGAACTGTTCTGTTTATTGACGAC
AGAATGTTATTTTGTCCGATATGCCCTCCCTCAATCTGAAGTTCAATTTTAGTAATTTTTTTATTAGTAG
TGACTTTCCCACTTTACTAATGCTTTTCTCTTAGCTCATTTAGAATTCCTGGAAGTCATCATGTTTCT
CTTCTGAATTGTATCATATTCTGTCTCTGTCTAATCAGAAAGTTAGGTGAGCTGCTGTCTCAGCTCC
TGTGTTAATCCAGGTACTGAGCTCTTTGTACCTGCCAGCTTGAGGGCAACTTGGATGCGCTGGTGTGTA
GTGATTGCAACTGTGAGAGAGCCGTTTCCATCAACAAGTGACAGCTTTTGGTTCTAAACACTGCTTGAC
CTCATTCTGGTTTGAACATATACTTTGGCCTCTGCCCTTACCTCACCTCCAGTTCTGATCTTGGGCATG
CCACAGAACCCATCTACACTAGGCTTTTCAATTTTGGACTTCTAAGTCTTTACTTGACCACTTATTTCT
TTAATTGCTAGACTTAATCATCCATGCATATGACAGCCACTCAGCTCTGACCCCAATATCTATTGAGGC
TCATGCCAGTCTGACCTCTCACAGGGAAGAGCACCCCTGCCGGTGAGCCCTTGGCCCTTGATTATGCTG
TCCCACCACTGCCAGCTGGCTGCTTGGCACTGCATGTGATGTATCTTTGTTTATTGATCGCTTAATGA
ATGGGATATAGGATTATATTTCCATGTTCCAGATCAAGTTGAGCCAAGCTGACAACCTTAGTATTAAAAAA
TATATTTATCTCTATCTGTCCAATTAATAATTTTAAATTTCTAGAGGTAGAGACAGTCACATTGCTATTTA
ATTCTTAGCACAGCAGTATTTTGTCAATATTTGTTATTAGTGGTGAGTTAAATTTATAAGGAAAAAAG
AGAAGTGGTGATTATTTATCTCAGCGCTTGCTAAACTATTTCCCTGATATAAGTCTATTATTACAGTCACT
AAGCATGACTGAAGTAATATCAACAACATAATATCATAATTATCTCTCTGTCTCTGCTCACTTTCTC
ACTTTTGTGTCATAGTGCATAGACCTGTAGAAAATTTATTAGTAATCTGAAGCATAAACCAAATAT
TACAACATATCAACAAATAAATAAACTGTGCACTCCTTTAGGGAGTAGTAAAGCCATTTCTAAATTA
AGTCAAGTAAGATTCCCTTATTTATTTAGAGATTTTATGTTATACATATCATAAGTAAGATGAATAAT
TTTGTAGCAGCTGACACTGCTATATAGATATTTATCTTGGGAAGTTCTCAGTGAACATCTTTACTGTG
TTTTTCTCTTATGATTATACTTTATGTTTATTATTTGTTTCTGGGGGATTCAAAAATATGCATTTTA
TGCCATACTTGGGGATTCCCTATAAATTTATAGTTGTAATATGACAGTTCCATCATGAATTTTCCAGGTA
TCTTTTATGCAAGCAGATAATAGCTCAATTTTGGTTTTTAACACATTATGCATATTTCTCTCTCAA
TAAATATGGTTTTAATTTATTAATGAAGATTTAAATAATGTGCTAAGCATTTTAAATAATATCGATT
GGATTAACTTGTATGTTTACTTAGGCTGTAGTTCACCATTTATTAGTTAAGTCTTCCCCAAATTC
AATATTGAACATGTGGAATTTGATTCTGTTTACGTGGATGTATCATTTACTCCCAAGATGTTGGTTTTGG
CATTTAGTACTGTTAATGGGCCAGGAAAGTGCATCTATATTTGTTGTTATTCACTGATTGCATCTTGC
CCTTGCAACCACTGAGACGATGGGAAGTAGCAACAATACTAGGTGATTCTTTGATTTAAACCAATTA

FIGURE 1, page 53 of 93

54/139

AAAGAATTAGAGAGTTGTCTGATACAAGGCCAAAGAACTAAGAACAGAAACAAAAGCAAAACAAACAAACA
GCAGCACAACTCCAGTGAGATAAATTTTTTAAACATTGGGAATATTTAAAAAATAAAACACTCCAATG
AACCACCCAGGTTTTATTAAAGAGTAGAGAACTCAAACAGCAGAAGGCAGAGCTGGTGGAGGAACTCAG
CAACTGCTCAGAAATGAACAACCTAGGAAGGAGGTGCGAGTGACCTGAAACTCCTTTTAAAAACAGAAA
GGACAAAAGAGGTTATGGGCTGACAAAAGGAAAGTGGTAGATTACTGATGATTGCATTATGCTTAGAAT
GTCTCAGAAATGCGAGAGGCAGTAAACACACCAGAAGAGGATACAATATCCGGACCATTGCAACTGCAAA
TAAATGTTTTGGGTTAAACTTGGTTGATTCTAAATTACATGAAGAGCTGATGATAATTGAGGCAGAACTG
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CACTTAATAAAAAGGAAATATTCCTCTAACTAAAGTTTGAGATTTAGGGCATAATCCTCAAAGACAGGCTA
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GACATTTCAAGGGCAATAGATTAATACATGAAACCCACTTATGCCTAGCGTTCCATTATTGGAACGCTAA
GCATGTGGGAGTTATTTATATCCTATTGCTCAAGGTCATCTCAAGGTCCTGAGTTTTCACTCATGCAAAA
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TTTTAAAAAAGTGTTAGTTAGTTAAGGTTAATTTTACCTAGTTAAGAAAAAGCAGTTTAGAGTCTTGAAA
TGGAAATAGACAGAAATACATAATTACCTTAAAAATAAGTTGATAGTGAATTTTATCTAGGATTTCTAAGAC
ATTTTTAATATTTAATGAAATGAACTACACAATTTATTAATAAATAGTTGCCTGGGTTAGAAAAATGAT
CCCTTAATAAGACATATACACAGCCTGAATTTTTTATTTCCAAATACTATAGCAACAAAATACCGGCAAG
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TAACTTTTAATTTTATTTATGATTATAAATGTCATCTAGTATGCAGCTTGACTTTGCTTTATGGTATCA
TCTGTTTTCAGAAAAATTTAAGTTGTGGAAATTTATCGTATTTTTCTTTATAGTTTGTGCTTAAAGACC
TGCTAATAAATCTTCCCTCCCTGGACGCTATAAAGTTATTTGTCTATATCTGTTAAAAGGAATAAAA
CTTTGCTTTTTTTCACATTTTGTACTTATTTTCACTGAAAGAGAATTTTGTATTATGTGAGGTAGGA
ATATAACTTAATTTTTTCCATTGAATAACCAAAATGTGCCAGAGCAATTAAGCAATACATTCTTTCCCT
GTTGATCTGTGAAGTCACTCCATTAGGCATGAAGTTGTCTGTTGAAGAGAATCTGATTCTGAGCTCTC
TTCATATTTCTTTATTTGTCTATGTCTACACTAAAAGCAATTTAATTTCTGTGTCTTTATAATTACTTT
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GACATCTGATGATATTTAGTCTTCTCCTACCAATTAACATTATATAACTCTCCATTTATTTTAGGCTCTTT
TGAATGACTTCTAATAAAGTTTTTCAATTTTCTCCAAAATATCTTACATATTAATAATTTACTCATAGCTG
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TGCTAAATCCTTGACGCCACAGTAATTTACTCTAGGCGCAAAAGATAGGTACTTTTTCATGACTTTTCG
CCATATATTGTCAAAATGGAACCAATGGTGATTTGTTTCAGAAATCATGGTACATCATATAAAAAGATTAC
TCTGCAAGCATCACAAATGTGATATATAGAAATGTGTTTATTGACATGAATAGATCATGAAGAAAGTG
ATTACAAATGGTATTTAAGCATTTTAAGTTATATAGGCTTATACTGAGCAATAACAAAGAGGGTGAATAA
ATGAATGAATATGTGATTCTGGAAGGGTATGTAAACAAAGGTTAACAATGGTTAGCCCTGGGTAAAGGGA
TTATGTATGACTTTTATTTCTTCTTTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCT
GTTTATGATAAATAAAAACTTTGATATTTCTTATATAGGTTTAGTAGGATAACATTTCTCCTTCATTT
CTTTCAATTTTGAATAATCTTCTTCAAGGAAATCTTTTTTTTAAATGTTTATTTCTGTCTTTGAGGAGT
GAGATTGACTGGCTATCTTTTAATACCTGTGTGATTATCATTATTGTATCTTGTGATAAATTTACAA
CAGTTAATTTATTTATTTCCCATTTTACATCTTAGCTCTATTTTAGGCAAGTTCACAAATATCATTGAATG
AGTTCAATCAATGTCATCATGATGATTTGAAATGTCAATAGCAGATGACTTGTCTGCGGTGTTAATA
TGCTGTGTTGATTACATTTGTTTTTGGTGTGGAAGGCAGCCACTGAGGCAAAACAGCAAGAAATACAGC
TAAGCCTCTAACTGCATCTCTTCTCACTCGTTGCTTAAACTGAAGCGTGGATAAATGGTGTGCATTCC
CTAAAAAGTTATGTCATGATGCAGTAGAGAAATAAGTTAACTTTCTATCCCTGTATCAAAGTTTCTTTT
GAAGGTAAGTGAAGACAGCGCCAAATAAGGAGCAGAGTTTCTGTGAATCATGAAATCTTTCTAAACAATTG
AGAAAAAATAAATGTTTCTGAAACAAAACCTTGTGCCCTATCCTTTTATTTGAATGTGTTTTCTTAAGGC
CACAACCTGGCAGAGATTTGATGATTTTATGTTTAAAGCAATTTTTTTTTTTTTTTCATAGCAAGGAGTCCC
ACTGCCATCAGGTTTTGTTTTTGGAGAGATTCTGTAACCTGACATAGGGTAACTTACTCTGATGGCTTGCT
CCACATTCACATAAGTACATACTGTTCTGAAAAATCTCAAAGTTGAAATATTTTTATTTGGGCAACTTC
TGCAATCAAGGTAATCTTACTCTATCTTTGGAGAAATAAATGGAAAAGGGCAACCAATCTCTGTGACCTT
AAACTTCCACTGAAACTTAGAGACGGTTAGCTTAGCTGGTGAGAGCGTGCTGCTAATAACACCAAGGTCG
TGTTTTCTATCCCATACAGGGCAGTCAAGCTCAAGGGAAAAACCTGTTCTTTGGCACAGCTTCCATGG
CCTGCTAGCCGTTTACAGCGAGGCAAAAGAGTAGAGATGTTTTAGTGAACCTAGGCCATGACTTGGGGAGT
CTCCACCTGTAATCTGTTTGTGGGACCAAGGAAGAGAATCTGCTGAGGCTGGGTAGAGAGACTCTAGAGC
ACCTTAGGCCACAGGACAGCAGAGGATGAGAATAACAGAACTGGCTTCAGAAAGTAGGTGTCAGTCCAAG
GCACTGTATTCAATACATGTAGCAAGAATGAGCTTCTGACACCAGGAAAGTCTTCAGATGGCAGTGACT
GCATAAACCCGTTGTCAGGATGCTGACTATAAAGGATGGGACACCTTCCATCAGGTGAGAGCTCTGGAGG
TGAGATCTGTTTCTGGTGAAGAGCATGGGTAAATGTCATCAAAGGTTCCCTCAGCCAGCACTGGGTTCAGG
GCTGAGGTGCACCTAGGAAGGCTTGGGCGAAGCATGACCCCTGGAACCTGGCCAACTGAGCCATCAGAG
AGTGGTGAGGTGAGGAGTGGTAGATGTGTAGTGAACCACTCAGCTGTCTGCCAGGCTTGGGTGTGGA
AGTAGAGTCTTCTGTGCTTTGGGCGAGACTGAATTATAAGCTTACCAGATCGCCAAGCTAGGAATGTTG
ACATACCTGGCTTGGGTCAGGGAGGACTGAACGTGAGGTGGGGGGCCCAACAAATCTAATCATAGA
ATCTATGAGCGTGGAGACAGAAGGACCAAGAAGGGATGCTGTAACCAATATCATTATTGAAAACTAG

55/139

GCAGAGATTACATTCAATTGGCAGTACCACCTTTTTATCTCTGACATAGTTCCAGAAGGATATACTATG
TATCTAGTGTGACACTGTCTGATAGAAATGTCTGAAATGATGGAAAGTCTCTGTGGCTACCCATTTTGAT
AGCCACTAGCCACAGGTGGCTATTGAGCACTTGATATGTTGTTGGTGTGACTGAGGAACATAAATTTTAA
TTCAATTTTAAATTTAAATTTAAATTTAAATTTAAATTTAAATTTAAATTTAAATTTAAATTTAAATTTAA
ACAGATCTAGATACAGAGTAAGTGGTAGCAGCAAACTCTATATTGGAACAATGTAAATTAACAATTATA
AATATATGAGCAGGACAAAGCCCAATGGGCCTGTACTCTTAGTTTGTCTATATATTCAACCATAACTAG
CACTCATTTTTTAACTTATAAAAATGCAAACTCATTTGGTTGTGATGATGAATGCTCAGGTAATTTGTTGA
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AATGATGATGAAAATTTTATCAGTATCTGTCTCAAGCTGTAGTTAATGGGCCAATTTCTAAATATTCCTG
TCAAATTTGATAGCCATTGTTTCAAAGTAGTTTGAAGTAGGCCATTGGTAAAGCAATCTATTAAAGT
GCAGGAAGAAAGTATAGAACTCTCTACTTTTTAAAGTCTCATTTGAAAATTATATTTCAGTTTGTATG
CCTTCGATGTACATAATATTAACACAAATATATTAATGCAGCGGTCCCCAACTTTTCTCACCAG
GGACTGTTTTCCTGGACGACAGTATTTCCATGGATTGCAGCGGGGATGTTTTCAGGATGAACTGACCCA
CCTCAGATCATCAGGCATTATTAGGTTCTCATAAGGAGCACACAGCCTTGAGCAGGTGCAGTTCACATAT
AGGGTTTGGCAGCTATGAGAATCTAATGCTGCCGCTGATCTGACAGGAAATGGGGCTCAGGCAGTAATG
CTCGCTCACTGCTCACCTCCTGCTGTGTGGCCAGTTCTTAACAGGCCATGAAGTGGTACCAGTCTGTGG
CCTGGGGGCTGGGGAGTCTGCATTAAATGTAATTAATTAATATGTACATTTCTTGAGAGTGTGTTGTTCAAATA
TTTTTCTTAATAGAGACGTATAACTTTAGAAAGTATGGAACCTCTGGTCAGTAGCATATTTTATCAAAA
AGGCTATCCGTCGTCTAACCATGTGATTAAATGTTTCAATTTAGTCTCAGATATTTTGATAACATAATA
ATAGGGAAGTTATGGTTATGTCATGGCTTTTCTTTACTGTATTTTCAATAACTATATTAATGGGTTCACT
TGTTACTAGTTTATTAATTTCTGTTTATTTCTCAATGAGTCTTCTGTTTCTCCCACTGTTTCTTCTATGG
TTCAATTTCCCTGCATCTTTACAGCTCCCTGGAACTTCTCTCAATCAATCAGAGGCTTCAAACTGGGC
AGTCTCATTTTGTAACTGCTCTGACTCGCTCTGGGAGGCTCCCTCCCACTCACAGCTGCCTTCTCTG
CATGATGTAAAATGAATACAGTGCCAGAAAGACTGATCCTTGAACCTCTTCTTACTTAGTTTCTTTTAT
AGTTCTGATTTTGAATATGACCATTTTACTTCCAGTGCCCTTCCCACTCAGTTAGTGGAGCTCTATG
CAGGAAGTTCCAGTGATCAGAACTGTTCCCATAGCTCCCAAGTGATTCTGACATGCACCCGCTTGGAG
CACCATGGACATGGCTGCTGTTGTTATCCTCGAGCTCTGCAAGCAGTGTGGATATTTGCTTGTATGTT
GCACATTAATCTACTGCACGGTCCGGTAGGTAGCCACTAGCCACATGTGGCCATTTAGATGTAAATGAAT
TTAAATTTAAATAGTATATAAGTTCAACACCTCAGTTGCACTCTGTATTCAAGTGTCTCAGTACTACA
AGTGGTTGGTGGCTACCATTTTGGGCAGTGTACTATACAACATTTCTATCACCACAGAGAGTGTCTGATG
AATAATAGTACTAACAACCTGGAACATTGAAATGGAGAGGTGAAGGAGAGAAGGCAGAATATAAGAGAAA
CTTCAAAGCATTCAGCGTGTCTGATAGGCGCTGTATCTTACATTATGTTTGGAGCATAGTTTTTGAATTT
CTTAATTTTCAAATTCGGTTGAAACAGATTTTGGTCAATTGAAGTGAAGGACTATGCCTGCTTTAATTTG
CGTAGCTTACCTTTGTTTACGTTGCTCCCTTATTACAGTGTGTTGAGCAGCATCTAATCAATCCCTAA
CTTCTTTTGGTGCAGGGACCATTTAAACAATTTGATCATAGAGTTATCTCTTGTCAATCCATATT
GTTTTATGGAACAGGTGAACAGCTGGTGACAATAGCCTCAAGGTTTCTAATCCCAACAAAGGAAAATATG
GTGTCAGTAATTAACCTTGTACTATGATATTTGTGAAATCCAAGAGAGGGCTAGATCTCAGGCTCTAATAA
TACATCCGTATAAAGCTCAGTAGGGCACCAGGAAGAGTCTTAGGATATCAGGAACAATAAGAGCGGG
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CTGTCTTTGACAGGCATGGATGAAGCCAGAAGCCATCATTTCTCAGCAAACTAACACAGGAACAGAAAA
CCAAACACCTCATGTTCCGACTCATAAGTGGGAGTTGAACAATGAGAACACATGGACACAGGGAGTGGAG
CATCACACAACGGGGCTGTGGGAGTTGGGGGACTAGGGGAGGAGAGCATTAGGACAAATCACTAATG
CATGTGGGGCTTAAACCTAGATGACGGGTGTATAGGTGTAGCAAAACCACCATGGCACATGTATACCTAT
GTAAACAAACCTGCACGTTCTGCACATATATCCCAAGTAAAGTAAATGAAGAAAGAAATAAAAA
ATAATAAAATAAAATAAAATAAATGAAAGTAGCCATTTTACCAGTTGAGTATTTACTGACTTTTGGTGA
AAATCACTTTTCTAAGATTCTAGAAACCTTATGACCCTCGGCTCTACTCCCACTGCGGATTTTCA
CCTCCACCTACTTTGTACGTCACATGCCCTTCTGCTCTTTAGGACACTTGTATTGGGTTCCCTCCCCAC
ACGTAACAGAAACACACAGGTCTGTGAATGGACCTCATTATGCTCATTGTCTTTGCCAAGAACTATTGA
AAATGATCACAATGACTATGTAATTAATTAAGATTTTGTACATGCATACACTTATTTTAAACAGT
TTGTCTGTTAAATGTACCCCCATTTTGAATAGTAACATTCACTGGTGAAGGAAGAAATTATTAATGA
CAATTTAAGTATATCTTGACAGGTAAGCCAGTTATTGTATTTTCAATTTGTGATTATTACAATACCTA
TGAAGATTAATAGGACAATTTATCTATAGGACTTGGTTATCAAAATGATCTTTTCCCATTTTAGTC
CATACATCTTCACTTTTAAATTTCTTCTTCCAAAGAACTCTGAGTCTTGCCAGTGTGATCTTCACTGAT
TTGTAAGAAATATAATGAAGAAATAACATGTATCAGATCTTTTTTTAATGTACTGGGCTAAAAATTAT
AAGCACCATCAAACTACTAGAAAATTTCTTTAACACTCTGCTTCTTAGTTAAAAAATGATTCCTTTTGT
GATAATCTTATAATTTTCAAAGTATCATTTTAGAAATTTTAAAAAATTATCTTGTGTTTCTTTCAGTCCA
TTTCATCAGAACTTAGATTTTCTTCCCTCTACAGTATGTTGCTTGTATGCTTCTCTCTGCAAAAT
AAATCTTTAGTTTTCAGGATCTCTGTGTTCTATTCTTCAATTTAAATCATAGGAAAAATAACTATCAT
TTCCCTTATGCTGTCTCAATTTCCCACTCATTTTCTGTGAGCAATTTTCTTCTTTTCTTCTGCTCTAC
TGTAAGGAACCTTTTACTCTGCTCTATTCTCTGCAATTCAGGGCTCACAATTTCTTTGACTTCTCAGATT
ATCCTTTGTACTTGTGCTACTTTTTCATTAAGAAAAAAGGCTTCGGTCTTATTTTGTACTTTATCATC
TTTATATTGCCATATTTAAACCATCTGCTTATTGATTGAACCAAACTTTTCTCTTACTTCTATCATAC
TGAATGTATAACTTCTGAATGACTTAAATCATCACATAATGTGAGAGAAATTTCTATCATATTCAAGT
GACTGCATTGTAAGCAATGAAGTTGAAGAAAAATAGCTTATAATGGATATAATACCAAGAAATAAAGA
ATGAGAACTCTGCTATATCATATACTGGGTTAACAGCTCACAAGGCAAAATCACCATTTTATAGATATT
TAACAAATCATACTAGTACTGGAGGAAGTATAGCAGAAAAAGGAGTATGGACATTGGGATTAGCTGCCCT
TGCTAATCTTTTCTGAGTCCCTAGTGACATGCTTTTGGGTTGAGTCAATGTTTACCTCCCTGAGCTGTTG
TTTATAAAATGGGGGTAAATATCTCAGATGTTTTCAGTGTGTGACATATAAGCGTCTCCATAGTACAT
AATACCTGAAGCACTCCATAAGGTAATTTCTTGTCTTTTAAAAAGTATACACTTTTGAGTTTCAGGACAG
TACACTGTAACCTAGTTGTAACCATTTTAAATAAAGAAAGGTTTGTATCATTTTGTATAATGTACTACAT
GAATAGTTAATTTGCCCTTTTCACTTCTATACCAACGGAATTTTGGTAAACAATTTAAAGAAAGCATTAG
GTTGAATATCCCATCTGATTAAATGTCACTAAATATTGTTTCTGGCTTTTAAATATTCTAATTCAGT

FIGURE 1, page 55 of 93

56/139

TATAAAACAGGCTCTATTACTCAGGAGGCTGAGGCAGGAAAATTGCTTGAACCAGGGAGTCGGAGGTTGCA
GTGAGCCGAGATCATGCCATTGCACCTCCAGCCTGGCGACAGAGTGAGATTCCGCTCTCAAAAAAAAAAAG
GTGAAATGAAAAACAAAAAGAGGGGTGAAATTTCTCTGCATTCTCCCTTTCTGCTGTTGGGAAAGCCCT
TTCATTACCAAGAATGCATGGAATTCGTCTTATTAATTTCTCCATCTATGTCTCTGTGAAAAATACTA
ATTATTTACAATTTTGTAAAGCTATGAATAAGGTCTATGTTTTCTCTGAAATTATAGCAACAGGAGCAATT
CCCCCTTATTTGGGCCGCAATCTTTTCATTCTGATTCTTACCATAACTTCTGACTTCTGACTTTATCATG
TCTTCTGATTTCTACTAAACATGAACAGAATGAATGACTTCTAGAAATGGATACAGGTGTAATACATATA
AGGCCAGGGAACCACTTAATTATCTTTACAAAGTACTAGGACTTCAGAAAAATCAAATGATGAAATGGAG
CTAGCTTTAGTATGTTCTACTTATCATTTGGACTATTAATCATGTCTGTCTGATGAGTTACCTAGGACTTC
AACTGTTTTTATAGATTTAAAGAAAAATATTATAAATGTATCTTACCTGGATTAAAGACTGGACAGCTGAT
TTTGGATTTTTTTCTGCTACCCCTGTGTGTGATATCACTGACATCAGCCTTTGCATTTTGACTGGAGGCTC
TTTTCTCTCTTTCTCTCTCTCTCTCTCTCTCTATAGGAAACCAGTAGTTATGTCAAGGTTGCTAAGTAT
TTTTCCCACTGAGGACAAAAATTTCTGGAGCAGTATATATTTAGCATTGACATTTGATAAACAAGCTTGT
TTGAGATATTTTCAATACAATTTAGCTTTGGCAATTGTAAGCAAAGGATCCAGTTGGTAATTTGGTGAAA
TGAAACAGATGTGGACACGCTGCCTGCATCGAGATGCATTAATTTTTCTGAAAAGTGGATAAGATCTTGTG
AGAATGAATAATGGAATTCAAATCAGATGGGGTGAGATATTGATATTCAGGAACAAATCACAGTATAAT
AGATCTGCTACTTTTGTGTTTTAATGGGGAGTTGCTAATGCTGAAATATAGTCAGAGAAAAGGAACGT
GGAATTTCTATAGAGGAGAGCCTGGCTCTGGGGTAATACTACTGCTCCTTGGTGGAAATGTTGCTTTTTCTG
AAGACATTTGGTTCAATTCAATACATGAAACATTCATCGATTATTATTTAGAAAAGCTAATCTACTGACAA
GACACAGAGTTAAGTAGTGAATAACAGAGACCTAGACACAGTTCTTATTAGAAAATTTTTTAATTTAGG
TGGCATATTTTCAGAGAGAAATCTCTGCTTGGGGCAATAGGTACCTCCTTTGGAATAAGCATGGTGAGAA
AGAATTTGCTTCTGGCAGATTAGTGAGAAGAGTGAGATATTTCTTTGATGACCTCTCTATTAATAATTTG
AGTGGTAAACTTTGTGATGATTGAGGCTCTTCATAATTCTTAATTTTATCATCTCTAATACCAGGACT
TGCCAGATCAATATTTTAGGAAACAGTCATGCTTGTCTAAACCCAGGGATTCTATTAACCACTAGATAA
GACATAAGTTTGTCTATGCAACAAGTATTTATTGAGTCCATAATTTGCCAGCACTGGGCTTTGGTACTCT
GGGCTTTGATATCTAGGTTGTGTGTCAGAGATGCTAATATATTTAAGGTGACAGAGTTTCAAAATGAGAA
TTTATGAAAATGAATATCCCTTTTTAAGTCTCGAGAAATATGATGTGCACCCGCTTGAGGCTTTATTA
TCTCCAGCGAGCATGAACTTGTTTGTGACCAATGTAGAAATGTTGTATGATGACTATCCCACTGGCAG
GCACCTTCTGTCCAAGAGAATGTAATGGATGTTGGTGACTCAAGCAATCCTGGGAAGACTCCTCCATGA
CCAAATTAAGACACAACAGGGGCTTGGTTTGTACTCAGCTCTACACCAATCAGCATGAGACAAGAAAGAA
TCCATGGCAAAGTGGGAGACTACTGTTTATTTTACAAGCTAGAGAAGGAAAACCTGCAGTTCTCTGAGTTG
CAAACTGCTAAGAAATGGGAGAACACAGAACTTTACAGGCTGAACCTTGGTGCTTAGTTATTCTCTCT
GGCTACAGAATGCCAACCACTAGGAGATTCTACTGAGATATTACAGGGAATGAAGCCAGGCAAGAAA
AATATGATTTCCCTTTCTCTCAGCCCATAAATTTTGTATTAATAAATCAGACTCTTATAGAACAGCTT
GCCACGGCTGTCTCTAGAAATGTTTTTATTAGCAGAATTTTTATTAAAAATAAAATACACAGTAGTTTAA
GAGTGAACATTATAGTTTTAGGTCTAAGGGGTGTCTGAGAGAACACATGTGGATGCTACTTGCCAGTTA
CTTGATCTAGGCTTGAATCTTGGTTTTCTGTTGCTCGGATAAGTTAGCATGATTGACATGCAGTTAAA
GGTGTTGGTAACTGTGATGATTGTTTCCATTTCTGATGCTCCTTGGCTGCTGACTTCTCGGAAAATTTCA
CAATTCATTCTCTATGAGGGCTGCCTCCTTGGTTGCTTGGCTAAGAGTGTGTTGAGCAACAAAGTTGGGA
AAGGAACCTTGCAGTAACTTTTAAAAATTAGTTAGAAACAAATGTCATCAAAGTAAATGATAATTTGCC
AATATGATTGAGCAAAAAGATGAAGATGCACGCTCCCTACGTATTGCTTTGCAAGAAATTAATTTGAA
AAATAAATAACATTTTAAAAATGAATTTGTAATATAAACACATGCTAATTCAGAGGGGAAATCCCTGTGA
TTATTCAGCAGTTTGTGTTTGTCAAGTGCTTTTCAGTCAGTCCATTCAGCTCAGCAGGGCAGAGGCTTG
GGCTGTTGTAACTTGTGGGCAGATACCCAGTGATGGGGCAGACATGAGCAGGTAGGGCTGACAGCATGT
GAATTGAGTTTTCTTCACTCATGCTGTTGCAGCTGCTCCCTTCCCTCATTGCTGAGTTTGCCACAGCAGG
TAGGAACCTAATCTGGAGCTGGATGAAGGAGAACCACATTGGGCTTGAGGAACAAGATCTGCCACC
CTGGTAGGCCCTGGTTAAATCTCATGCAAGTGAGCAATGAGAGAGGGTATGATTGAGTTCTAATTTAGG
AGGAAAGGGGATAATGTGCCCTTTGCACCCCAAGGAGAAATCATGTCTCATCTGTGCCCTAAGTAGACTTA
TCAAGGGCAGTTGGTTCAATGTGTATCACCCCAAGGACTATAGTGTATGAGAATTTGCCAGTGTA
TTTGAATTTGGTGCTGGCAGATGACATCATGAGGTATTATGTTTACCATAAATATGCTAGTTTATTGA
GAAGGTGGTAGACATGCTAGTGGATGAGAGGGAAGGACAGAAGCAGTTAGTAACACAGCATCTGCAACAAT
TCAGTTAACTGGTGGTTGTACAGTAGCATGGTGGAAAAGTTGGCAATTAATAACTTCTAAGAAAACCTGA
ACTAATGAACCAATCCTGCGTGTGCTATGTGTATAACCTCCTTCTCACTATTAACAGATTGTTTCCAAAC
TTATATAAGACAATGAAAAATAAGCTTGGCAATATAGGGAAGGGATGGAGGGATAAAGCTGTAAATCACG
TCACAGGCAAAATTAAGATATACCCTGGATCAAGGGATTAAATGCAGAAAAGACTGATCCTAATTTTTC
TTTTATTAGCAATAAGATTTGTTACTTACATTGATTATTTAAATGAGTTGCATTATTAGAAAGGACTA
TTTTGAAGACAATATAATAAATGTGAGTAACCTGATAGTAGCCAAGATATTTTAAATATATCAAAGTTG
TGTCATTATATTAATGTGTCCCTTAATATGAAGTCCCTGCCAGGCTTATTTATGTATTCAACAGACACA
TACCTGTTAAGTGTGAACAGATATTTCTGGACACAAGCAATGGTAAACAAGACAGATGCAGTCCCTGCTTT
CATGCAATTTGCAATTTGAATGGTCTTTGACATTTTATTGTGATTGTTTTAGTTATTTAATTGGAGAGTT
TTAATTTAAATTTGTGTTATATTCAAGTGTAAAGGAACAAAATGTAATGTGCAATTTCTGAGACTCAGTA
ACACTTCTGGTTTTCTCTTTTTCATTTAAAGAAAAATTTAGTGCCCAAGATAAGCTAGAAATTTTTGGAAT
CAAGTATGATGACCTGGGAGCCAATTTTATTACAATAGTGTTTTAGTGGTCTTAGAACTTTTCAGAG
GTGGTAGCTCTGAAAATAACACTGTAATAAATTCACACATACATCTATCATCCAATAAATGTTAATTGAG
GCCCCTACAGATTGTGTAGATTCTGAGGTTACAAATGTTGACCCCATGTGCAACATGTTGACCCCA
TCAATGTAATCAGTTTGACATTACACAGTCATTTAAACATTAAGTGTGAGCGGATATTTAGTTGTAAT
TTTGATAAGTGTCTGGAAGGAGAAAACAGTGGGTGTTGTGAAAAGCAGTATTTGGTTGATTGATTATTAT
AGAGGATCTGAGAAAACCTTACTTGAGGAAGGAACATTTGGCTGAACCTAAAGAGATGAGTAGGAGTTAAG
TAAGCAAGGAAGAAAAGAACACATGAAGGAGGAAGAAATGTTCTAGAAAACACACACACAGGTATATG
TATATGTACATGTATATGTATATGCATATGTCTTCTTGAAGAACATATAAACAGCTGCAACATGATTGAA
CTTATTTACCAATTAACCAAGCTTATTTGACCATGAAGGTGGAGATAAAGGCTTTTTAAGCAGCAAG
GATAGAATCTTTGTAGTTTTTATTATAGGCTGGTTCTTGACAACCTTAATTTTTTCATCTTTACCAAC

FIGURE 1, page 56 of 93

57/139

TTTCATGGTCTTCAGTACATACAATGCAATCATTATTATAAAATTATATTTTGACTCAAACCTCTAAGGTAG
GATGATTACAGCTGTGCGCCATCAACATAGCAGCATGAATGGTAGAGACTAGTCATTCCAAACAGTGAAGG
GGCAACGTAACAACTAATTTTAAATATTATATGAAAGTACTTCTTGCCCTTGACTGCTTTTTTTTTTTTTTTG
AAGAAAGCAAACCTTTAAAAATTTATTTAGATTTACAGAATTATTGCAAGGATAGTAAGAGAGTTCTCAT
ATATGCCTCAGCCAGTTTCTCTATTATCGACATCTTACATTATATGGTACATCTATCATAACTAATGAA
CCATATTGTTTCATTATTAGTAACATAATCTATACCTTTATTCAGATTTTCTAAGTTTCTCTAATGTT
CTTTTTCTGTCCCAGGACCCCATCAGGATATGGTATGTATAGTTGTCTATGCTTCCAGGCTCGCCATGG
TTGTGACAGTTTCTGAGACTTTCATTGTTTTTGATACCCAGGTAGTTAGGCATTTTGTAGAATGCCTC
CCAGTCTGAATTTGTCTGATGTTTTCTCTATGGTTTGACTGGCTTTAATGTGTTTTGGGGAGGAAGACCA
CAGAGGTTAAGTGTGATTGTCTATCAGATCGTATCAAGGGTACATGCCATCAATATGACTTATCACTGTTG
ATATTAACCTTGATCATCTGGCTTGAGATAGTATTTGTGAGGTTTCTGTATATACAGTTACTCTTCTCC
CTGTCCATACAGTACTTTTGGGAAGAAGCCATTTTGTGAGCTCATTTTTTTTTTTAATTTTAAATTTTAAAG
TTCTGGGGGTGATGTCAGCATGTGCATGTTGTTACATAGTTAAACGTGTGCCATGGTGGTTTGTCTGCA
CCCGTCAGCTCATCAGTATAGGCATTAAGCCACATGCATTAGTTGTTTTTCTAATGCTCTCCCTCCCC
CAACCCCATCTGACAGGTCAGTGTGTGTTGTTCCCTCCCTGTGTCATGTGTTCTCATTGTTTCAGC
TCCCACTTCTAAGTGAGAACATGTGGTGTGGGTCTCTGTTCCCTGCATTAGTTTGTCTGAGGATAATGGC
TCCAGCTCCATCCATGTCCTGCAAGGATTTGATATCCTTCCCTTTTATGGCTGCATAGTATTCATG
GGGTTATGTACACATTTTCTTTATCCAGTCTATCACTGATAGGCATTTGGTTTGATTCCATGCTTTTA
CTATTGTGAATAGTCTGCGTGAACATATGCATACATGTATCTTTGTAATAGAGTGATTTATATTTTCAC
TGGGTATATACCCAGTAATGGGATTTGCCAGGTTGAATGGTATTTCTAGTTCTAGATCTTTGAGGAATTGC
TACACCATCTTCCCTCAATGGTTGAACATAATTACATTCCGACCAACAGTGTAAGAGTGTCTTAT
TCTTTGCAACCTCGCCAGCATCTGTTGTTTCTTGGCTTTTTAATGATCACCATTCTGACTGGTGTGAGAT
GGTATCTCATTGTGGTTTTGATTTGCATTTCTCTAATGATCAGTGATGTTGAGCTTTTTTCATATGTTCT
TTGGCCTCATGAATGTCTCTTTTGAAGTGTCTGTTTCATGTCTCTTCCAACTTTTAAATAGGGTGT
TTGTCTTTTCTTGCAATTTGTCTAAGTTCTTGTAGATTCTGGATATTAACCTTTGTGAGATGTATAG
ATTGCAAAAATTTCCCCAGTCTGTAGTTGGCTGTTTTCTCTGATGATTGTTTCTTTTGTGCTGTACAGA
AGATCTTTAGTTTAAATAGATCCCATTTGTCAATTTTGGCTTTTTTGTCAATGCTTTTGGCAGTTTGT
TCATGAATCTTTGCTGTGCTATATATTATTGCATAGATTTTCTTCTAGGGGACTTCAAACATATGCT
ACAAAACCTCAATAACCAACACAGCATGGTACTGGTACAAATACAGACACATAGACCAATGGAACAGAA
AGAGAACCTCAGAAATAAGCCACACATCTACAACGATTTGACCTTCGAGAAACATGACCAAAACAGCAA
TGGGGAAGGATTGCCTATTTAATAAATGGTGTGGGAGAACTGGCTAGCCACATACAGAAAATTGAAAC
TGGACCCCTTCTTACACCTTATACAAAATTAATCAAGATGGATTAAAGACTTAAGTGGAGCTCATAT
TTAAGGATGAGAGAATATGCTCTACCTCTTAAAGGGTGGAGTAGCTCTATAAATTAATTTGGAAGTGTCT
ATTCTCCTCCATTAATTTTATTTAGTCAACAAATAGTATCAGCCATCTAGAACCCATGAATATTTATGCTT
TGGGTACAGTCCAATACTATTTTATTTTGTAGCTCATCTTGTTCAGCTTTTGGCCATTGGGAGATTTTCT
AGTTGGCTCCTGTATCTCTTTGGCTTCTTACATATCATTGTAGGGTTTTTAAAGCCCTTTTCTTACTTT
CTGTCACTACAAGATAGTTCTAGACTTATCTTCTGTATTTTTTGGCCAGTTCTATGATCAGCCACTTCTC
CAGGAGCAATAAATTTCTTCAATGAAACCAAGATATGGGCTGTGGTGTACTTGTGTTATTGTGTGT
TGTTACTTCTAGATCCTCTAAGCTGATAGTGCAAGAGATATATGTGTGTGTACCAACCTATATATCTAC
ACACATATAAAATATTTCTATTTGTAACCATCTGTATCTATCTTAGGCTAAACCTGAGTACCTACTGAT
GTCTCCAATTCTAACCTGCAACAGCATGGAACATTCTAGCCTTCTCCTCTTACTTATCTGTCACTTCCTA
TACCAATAGTGAGAAACCTGGCTCCTACCATCTGCTATTTTACTTAATTAATTTAATCCACTATACT
TCTATGGAAGTTTTCAGAAATGTTAATCTGTACTCATGTACGAAACAACTTTATCAACTAGAGTATAGTGT
TTATATACAGTTCTCTTGCCTTTATCTAACAGATTCCACTTACTCATTTTCCGAGTCACTTAGGTTAGC
GCCTTATTTTCTAAGTCCATTAGTGAGTTGCTTCATGTATTTGTCTATACATTTAAATCTTTTGTAAAT
ATTGTGCACTCCATCCAGTTTCCCTGACATCTAAATTAACCTTTTAAAGTTTGGATACATTGTGGTCT
ATTCTTTGTTCTGTAAAGCTTTATGGATTTTGACAAGTATTTAATGTATTGTATCACCATTATAGTAATA
TAGTTCTCTATGGAATAGAAATAGTTTCTATCGCTGTAGCATAGAATAGTTTCTCTACTCTATAAAATATCC
TGTGTTTCTCTAATTCAACCCCTCCTTCCACCTTGAACCTGCAACCCCTGGTCTGTTAATATCTT
TCTTTTGTCTCTCTAGAAATATCATATAATTGAAATCATACAATATGTAGCTTTTTTCAGACTGGCTACTT
TCACTTAGCAATATTCTAGTAAGTTTCTATCTATATATTTTCTATGCTGTAGTCTATTTCTTTTAAATC
ACTGAATAATACCTTTTATTTATCCACTCACTGGTGAAGAATCTCTGATTGCTTCTAAATTCATGGCAAT
TATGAATGAAACGTCTTAAACATTTTGTGAGGTTTTTGTGTGATGTGATTTTCAAATAGTTGGG
TAAATATCTAGGAATCAATTTCTGCATCATTGTGGTAAATGTGTTAGCTTCATAAGAAATGGCCAA
CCTATCTTCCAAATAGCTGTACCATTTTGCATTTCCACAGCAATGAATGAGAGTTCTTGATGCTCGAC
ATCCTTGTGAGCATTTGATTTTTGTGAGTGTGTTGGATTTTAACTATTGTAATAGATGTGTAGTAGTGT
TGATTGTTTTAATTTGCAATTTCTTTTCTTTTTTGGAGTGGAGTCTCGCTCTGTGCGCCAGGCTGGAGT
CGAGTGGCAGCATCTTCTGCTCATTGCAACCTCTGCTCCTGGGTCAAGCAATTTCTGCTCAAGCTCC
CAAGTACCTGGGATTAAGGCGCTGCCACCATACCCGGCTAATTTGTGTTATTTTGTAGTAGAGTGGGT
TTCACCATATTGGCCAGGCTGGTCTTGAACCTCTGACCTTGTGATCCACCCGCTGGCTCCCAAAGTG
CTGGGATTACAGACATAAGCCACGGCTCGGCTGCAATTTCTTAATGCAAAAATATTGAGGATATT
TTCACATACTTTTTTGCCAACTGTATTTTTTAAATTAATTTTTATTTTATTTTATTTTGTAACTTTT
ATTTAGATTGTTGGGTACATATGTACATTTGTTAATACAGGCAATTTGTGTACAGGGGTTGGGTAC
AGATCATCTCGTACCCAGGTACTAAGCATAGTTCTTGATAGTTCTTTTTCTGATCCTCTCCCCACTCC
CACTCTGTCTCCCTCAGGTAGGCCCCAGTGTCTTGTTCCTCTTTATGCCCATTGGTCTCTATTATTT
ATCTCTCACTTAAAGTGAGAACATGCAGTATTTGGTTTTCCACTCCTGCATTAGTTTGTCTAAGGATAAT
GTCCTCAGCTCCATCTTGTCTGTACAGGACATGCTCTCGTGTTTTTTTCTTTCTTTTATTTTAA
TGGCTGAATAGTATTCACGGTGTCTATGTACTACATTGTTTTTTTTTAAACCCGTCATACCATTTGATGG
GCATTTAGGTTGATTCCATGTTTTTGTCTATTGTGAATGTGTTGCAATGAACCTACATGTGCATGTGTCT
TTATGGTAGAACAAATTTATATTCACCTGGGCATATACCCAGGAATGGGATTGCTGGGTTGAATGGTAAT
CTCCTTTTAGGCTTTTGGGGATTTCACATGCTTTTCCACAATGGGTGAACATAATTTACACTCCACCA
GCAGTGTATAAGTCTTCCCTTTTCTCCATAACCTCCCGCATCTGGTTTTTTTTTGTGTTGTTGTTGTT

FIGURE 1, page 57 of 93

58/139

TTTTTAGTATTTAATAATAGCCATTCTGACTGGTGTGAGATGATATCTCATCATGGCTTTAATTTACATT
TCTCTAATGATTAGTGATGTAGCATTTTTCATTGTGGCCAACTGTATGTATTTTCAATGAGGTGT
ACATCAGATCTTTTGGCCATTTTAAAGTGGGGTTTGGGCTGGGCGCAGTGGCTCACGCCGTGAATCCC
AGCACTTTGGGAAGCTGAGGCAGGCAGATCACCTGAGGTGAGGAGTTCGAGACCATTCTGGCCAACATGG
TGAAACCTGTCTCTACTAAAAATACAAAATTAGTCGGACATGGTGTGGGCACCTGTAATCCAGCTA
CTTGGGAGGCTGAGGCAGGAGAATCACTGGAACCCAGGAGGTGGAGTTGCAGTCAGCTGAGACTGAACC
ATTGCACGCCAGTCTGGGCAACAAGAAATGAACTCCATCTCAAAATACATACATACATACATACGTACAT
ACATAAAATTGGGTTTTTGTCTTTTGTGAGTTTGAGGAGTTTTTTGTATATTTTGATTACAAGT
CTTTTATCAGCCATGTGTTTCACAAATAATTTCTCCAGTTGTGGCTTATCTTTTCACTCTCTTAATTG
TTTTTTTCAAAGTAGAAATTTAAATTTTAAATGAAGCCCAATTTATTAATTTTTTTCTTCCATATTGTGCT
ATTGGTGTGTATATAAAACTTACTACCAATCAATATCATATAGAATTTTTCTGTTTTCTTCAAGA
AGTAGTTTTATAATTTGCATTATATGTTTAGATCAATGATTACCTTAAGTTTTGTTAAGGTGTAAGG
TTTGTGTATAAGTTTTCTTTTCCACATCAATGTCCAGTTGCTTCAGCAACATTTCTTTTTATATATA
TCTTAAGGGTAATCAGCGCAATATTTCTGAAAAGATGACCTTTTTCTCATTTAATTGGCTCTTCTTGT
CAAAGATCAGTTGACCTTATTTGTGTGGATCTATTCTGGACTTCTTACTCTGTTTCACTAGTCCATCTG
TTTATACTTTAAACAGTACCATACTGCCTTTATTACTGTAGCCTTTATGGTAAGTCTTGAAATGAAATAG
TGCAAGTGTCCAGCTTCTCAGAATTTTGTCTTCTCAGTATTAAAGGCTATTCTAGGCTTTTGGCC
TTCTTTAAACATGTTGGAATCAATGTCAATATCTACAAATAGATTATTGGGATTGGATTAGATTAC
TCTGAATCTGTTAATTAAGTTGGGAAGAATTGACATTTTATCAATATTGAATAATATGAACATGTAATAA
TATTGAACCTTTCATCTCTATTATCTCTTCATCATTTTAAGATCTTCTTTTCACTTTTATAG
ATTTTACATAGGCTTGTACATACTTTGTTAATTTATATCTTAGTATTGAATGACTATTATAAATG
GTATTTTCTAACTTTGAATTTCTGTTTATTCATGATGATATGTAGGAAAGAAATGACTTTTGTATATTG
ACATTAGATCCTTTAACCGTGGCATATTACTTATTAGTCCAGGGGAGATTTGTGTGTGTGTGATT
CATTTGGAATTTTCTGCATAGATAATCATGCCATCTGTGAATAAAGATGTTTTATTTCTTCTTCCCAATC
TATATATCTTTTATTTCTTTTTTGCCTTATTGCCTTGTCTGGTATTCTAGCATAATGTATAATAGGAG
GAATGAGATAAGATATCTTAGAATTTATCTCATCTTCAGGGGAAAGTGGTTAGTTTTTGTCTTAAGAA
TAATGTTAGCTATTGTTTTTTAAATTTCTATATGAAATTGAGGAAATTTCTGTCTATTCTGAATTTGC
TGAGTTTTTAATCATAAATAGCTGTTGAATTTTGTCAAATAGTTTTCTGTGTCAATTAATATGATCATA
TGACTTTTCCCGTTTTCACTGTTAATGTGGCAGATTATATTGATTTATTTTCAAATGTTGAATTTGCCAT
CAGACATGGAATAAATCCCATTTTGTCTCATGATGTATAATTTATTTTATGCATCGTTTGTCTGTCTTGT
AACATTTTGTGTAGATTTTGTGCCAGTGTCTCAGGAGAGATATTGGTCTCTAGTTTTACTTTCTTATAATA
TCTTTATCTGATTTGGGTATTAGGATAATCTAGACTCAGAATGAGTTAGGATGTGTTTTCTGTGCTGT
TTACTAACACAGATTGTAGAGAATTGGCACAATTTCTTTCTGAAGATTGTTAGAAGTAATCTTGGCCAC
CACTGAGCCAGATGATTTCTTTTGAAGGTAATTTAGTTATTGAATCAATATATTTAATATATAGAGAT
ATTTAGGCTATTATTTCTCCATGTGTGAGTTTTGGTAGTTTGTGATTTCAAGGAATTGGTCCATTTC
TCCAAATATCAAAATTCGTGAGCATAGAGTTGTTCAATAATTCTTTATTTATCTTTTAACTCCAGA
GACCAGTCGTGGTGACTTCTCTTTTCAATTTATGATATTGTAATTTATGTTTTCTGTCTCTTTTTTTTT
TGCCAGATCTAACTCTGCCACCAGGCTGGAGTGAATGGTGTGATCTGTCTCACTGCAACCTCTGCC
TCTTGGGTTCAAGTGATTCTCATGTGTGTCAGCCTCCCGAGTAGCTGGTATTACAGGCATGCTCCAATACAC
TTGGCTAATTTTTTTTTTTTGTATTTTGTAGAGATGAAGTTTTACCATGCTGGCCAGGTTGGTCTTGAA
CTCTGGGCTCAAGTGCTCTGCTGCTCGGCTCCCAAGTGCTAGGATTACAGGCGTGAGCCACCGTG
CCCGGCTCTTTTTCTTTAATTAGCCTGAATAGAAGTTTATCAATTTTATTGCTCTTTTAAATAACAGT
TTTTGTTTCACTGAGTTTTCTTTATCATGTTTCTGTTTTCAATTTTATTGGCATCTGCTCTAATTTTCA
GCTCCTTGACTTATGATGGGGTTGTGTCCAGTACATCCACTGTAATTTGAAAATATCATAAGTCTTTTG
ACTTATGTAATGATCTAACCTACCAACATTTATCGCTTAGCCTAACCTCCCTTAAATGTGCTCAGAAC
CATACATTAGCCTACAGTTGAGCAAAATGATCTGGCAACAAAACACACTATAGAGTATTGATGGTTTACC
CCGATGATCATAGTACTGAGAGTGTGCGGCTTGTGCTGCTGCTGCCAGCATTAAAGTGAAGTATTGTT
CCATATATTGCTAGCACAGAAGATCTAAATGAAAATTCAAAATACAGTTTCTACTGAATGCATGCATAT
TACTTTTGCACCATTTGTGAAGTCAAAAAAATAAATAACCAATCTTAAGTTGGGAACGTCTATAT
TATCTTTCTCTTCTGCTTGTCTTTAAGCTTATCTAGTTTTTTCTTCTCTAGTTTCTTAGGTGGTGGCT
TAGGTTGTGATTTGCTTATATATATATTTTTCTTATCTAATATATTTTACTTAATGCTATGAATTTTTCTA
AGCACTGCTTTTCTGCTATCCACAAATTTTGTATGTTCTATTTTTATCTTCAATTTAGCTCAAAATAGTTT
ACCATTTATTTTGGGCTTTTCTTTGACTCATAGTTCTTTAAAGTGTGTTGTTCAATCTCTAAATAT
TTCGATATTTTCCAGCTATCTTCTGTTGATTTCTAATTTATTTCCAATTTGGTGTGAGAGCTACTTTG
TACACTTTTCTGTTCTTTTAAATTTGTTAAGGGTGTTTTGTGACCCAGAATGTGGTCTATCTTGGTGCATA
TTCCATCAGAACTTGAGAAGAATGTGATTAAGTTGTGGTTTGTGAGGATTTCTATAAATATTAATTAG
ACCATGTTGATTATCATACCGTTTAGGTCAACTATATCTGATTAATTTTCTGCTGCTTGCCTAGCA
ATTACTGACAGCGGAATGGTGAGGTTTCTAAGTATAATAATGGTTTGGGCTTGTCTATTTCCCTTTTAG
TTTCAATGATTTTGTCTCATGTGTTTGTGATTCACTTTGTAGGTATACACATATATACACATATTTAG
ATTGTTGTATCATCTTGAACAACCTGACCCCTTTATCATCATCTTTATCCTTGGTACTTTTCTTCTTTGG
TAGTCTGCTTTGCTATGAATTAATATAGCCACTCCAGCTTTATTTTGTGAATGTTAGCATGGTGTATCT
TTCTCCATTCCTTTACTTTTAAATATCAGAGTTATTACATTTAAAGTGGGCATTTACTAGGATAAAT
ACCAATAAAGTATTTGATGCTGGGCTTAAACCTTAGATGACAGGTTAATAGGTGCAGCAAAACCACCA
TGGCACATGTATACTATTGGAACAAAACCTGCACATTTCTGCACATGTATCCAGAATTTAAAGTAAATAA
AAAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAA
GGCTGAGGCAGGAGAATCAAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAA
CTTTCTTAAATCAATCTGACAATTTCCATCTTTTAACTGGTATATTTAAACAATTTATATTTAAAGCA
AGTGTGATATATTTGAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAA
TTTTTGGTCTTCTGTAGTTTTATTTGAGCAATGTATGTACATTTTATCTTTTCTTCTTAGAGTATTA
ACTATACCTCTTTTTTTTTTTTTTGTAGACAGAGTTTTCTTGTGTGCCAGGCGGGAGTGAATGGTGC
GATCTTGGCTTACCGAACCTCTGCTCTGCGGTTCAAGCGATTCTCTGCTCAGTCTCCGAATAGCT
GGAATTAACAGGCATGTGCCACCATGCCCGCTAATTTGTATTTTGTAGTAGAGACCGAGTTTCTCCATGT

FIGURE 1, page 58 of 93

59/139

TTGGTCAGGCTGGGGTCTTAAACTCCTGACCTCAGGTGATCCACCGGCTCTGCCCTCCCAAAGTGCTGGGT
TTACAGGAGTGAGCCACCGCACCCTTAACCTATACTTCTTTAAAGAATTTTGTAGTGGTGGCGCTAA
AGTTCACAGTATACATTTTAAAGTATCTAAATACACCTTCAAATAACACTATTCCTTTTACATGAAAT
ATAGGGATATTATAACATAGTATTTCAATTCCTCCTTACTGTCCCTTGTGACATAGCTGTCATTTATTT
CATTTCACATTACCTATATACCTTATACCTTATACATTGCTGCTATTATGATTTTAAACAGGCAGTTATT
GTTTACGTCATTAAGAATTTAGAAAGAATTTAGAAATCCTGTGTAATAAATTTCCCTTTTATTTTACCT
TAATTCATGCATTCCTGATTATCTTCCATGCTTTATGTAGATCCAAGTTTCTGACCTATATCACCTTCC
TCTTGCTTGAAGAACATCTTTAACATATTCTGCAGGGCAAGTCAGCTGGTGATGAATTTCTGAAATTTT
TGCTGATTTTCTTTTAAATATTTCCCTTACCTTTTGAAGGATAATTTCCCTGCATCTAGAATTTCTAAATG
GTCACCTTTTCAACATTTTATATATTTTACTTCACTTTCTTTATTAATGTACGGTTTCTGAAGAGAAAT
CTGCTGTATTTTCATCCTGTTCTCTATGGTTAGGTGCTTCCCTGCCCTGGCTCTGGCTTTTCAAGATTTT
CTCCCTGCTTCTTGGTTTTTCTACAGTTTGAATACAAATATGCCTAGGTGTTGTTTGGTTTTGTTTTTGT
AGGAGTGGCATGTATTTATCTTTGATACTCCCTGAGCTTCCCTGGATCTGTGGTTTGGTGCTGTCATT
AATTTTGAAGAAGTTCTCAGCCATTACTACCTCAAATATTTCTTCTTCTGCGCTTCTTTTCTTCTCTG
GTATTTCCAATTATGCATATGCTTGTATACCTTTTCTTTTCTTCTTCTTCTTCTTCTTCTTCTTCTG
GGGACGTTTCTGTTGACTTATCTTTCACTGATTATTTCTTGGCCGTGTTGAATCAATTGATTA
GTCTCAAAGACATTTTTCATTTCTGTTACACCATTTTACATTTCTAGCATTTGCTTTTGATTCTTTCT
TAAATTTCTATCTTTCTGCTTATATTACCCATCTTTTATGTATGTTGCTTCTTTTCCATTAGAGCC
CTCAAACCTTTTTTTTTTATATACCTTTAAGTTTTAGGGTACATGTGCACATTGTGCAGGTAGTTACAT
ATGTATACATGTGCCATGCTTGTGCGCTGCACCCACTAACTCGTCATCTAGCATTAGGTATATCTCCCAA
TGCTATCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCT
GTGATCTCATTTGTTTCACTTCCACCTATGAGTGAGAATATGCGGTGTTTGGTTTTTGTCTTGGCATAG
TTTACTGAGAATGATGATTTCCAATTTTATCCATGTCCCTACAAAGGACATGAACATCATTTTTTATG
GCTGCATAGTATTCGTTGTTGATATGTGCCACATTTTCTTAATCCAGTCTATCATTTGTTGGACATTTGG
GTTGGTTCCAAGTCTTGTCTATTGTGAATAATGCCGCAATAAACATACGTGTGCATGTGTCTTTATAGCA
GCATGATTTTATAGTCTTTGGGCATATACCCAGTAATGGGATAGCTGGGTCAAATGGTATTCTAGTTT
AGATCCCTGAGGAATCGCCACACTGACTTCCACAATGGTTGAAGTATGTTTACAGTCCCAACAGTGTA
AAAGTCTTCTTATTTCTCCACATCTCTCCAGCAGCTGTTGTTTCTGACTTTTTAATGATGCCATTCT
AACTGGTGTGAGATGGTATCTCATTTGTTGTTTTGATTTGCATTTCTCTGATGGCTAGTGATGATGAGCAT
TTTTTCATGTGCTGTTGGCTGCATAAATGTCTTCTTTTGAAGTGTCTGTTTCATGTCCTTTGCCCAT
TTTTGATGGGTTGTTGTTTTTCTTGTAAATTTGTTTGAAGTTCATTGTAGATTCTGGATATTAGCCCC
TTTGTGATGATGAGTAGGTTGCGAAATTTTCTCCATTTTGTAGGTTGCCCTGTTCACTCTGATGGTAGTT
TCTTTTGTGCTGTGAGAAGCTCTTTAGTTTAAATAGATCCCATTTGTCAATTTTGGCTTTTGTGTCATTG
CTTTTGGTGTGTTTGGCATGAAGTCTTTTGCCTATGCTTGAATGGTAAATGCCATAGGTTTTCTTC
TAGGGTTTTTATGGTTTTAGGTCTAACGTTTAAATCTTTAATCCATCTTGAATTGATTTTTGTATAGGT
GTAAGGAAGGGATCCAGTTTCACTTCTTACATATGGCTAGCCAGTTTCCAGCACCATTATTAATA
GGGAATCCCTTCCCTGTTGCTGTTTTCTCAGGTTTGTCAAAGATCAGATAGTTGTAGGTATGCGGCGT
TATTTCTGAGGCTCTGTTCTGTTCCATTGATCTATATCTGTTTGGTACCAGTACCATGCTGTTTTG
GTTACTGTAGCTTGTAGTATAGTTTGAAGTCAAGTGTGATGCTTCCAGCTTGTCTTTTGGCTTA
GGATTGACTTGGCGATGTGGGCTCTTTTTTGGTTCCATATGAACTTAAAGTAGTTTTTCCAATTTCTGT
GAAGAAAGATATTGGTAGCTTGTATGGGATGGCATTGAATCTGTAAATTAACCTTGGGCAGTATGGCCATT
TTCAGCATATTGATTCTTCTACCATGAGCATGGAATGTTCTTCCGTTTGTGTTATCTCTTTTATTT
CATTGAGCAGTGGTTTGTAGTTCTCCTTGAAGAGGTCCTTCAACATCCCTTGAAGTTGTATCTCTAGGTA
TTTTATTCTCTTGAAGCAATTGTGAATGGGAGTTCATCATGATTTGGCTCTCTGTTTGTCTGTTGTTG
GTGTATAAGAAATGCTTGTGATTTTGTACATTGATTTTGTATCTGAGACTTGTGTAAGTTGCTTATCA
GCTGAAGGAGATTTTGGGCTGAGACAATGGGTTTTCTAGATATACAATCATGCTGCTGCAACAGGGA
CAATTTGACTTCTCTTTTCTTCAATGAATACCTTTATTTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCT
ACTTCCAACACTATGTTGAATAGGAGCGGTGAGAGAGGCGATCCCTGCTTGTGCCAGTTTTCAAGGGA
ATGCTTCCAGTTTTTGGCCATTAGTATGATATTGGCTGTGGGTTTGTATAGATAGCTCTTATTTATTT
GACATACGTCCCATCAATACCTAATTTATGGGAGTTTTAGCATGAAGAGTTGTTGAATTTGTCAAAG
GCTTTTTCTGCTATCTATTTGAGATAATCATGTGGTTTTTGTCTTTGTAGAGCCCTCAAATTTCTAATCACA
ATTGTTTATCTCTTTCTGACATTCCACATCCAATCCATCAGCATGCTTATTGGCTTTACTTTCAAAT
AAATTAACCTCAGCCATTCTCAGCATTTTAAATCACCCTAATACAAACCCCTGCTACCTCATCAAC
TGCAATGGCTTCTAATTTATTTGTAACTTTGTATCTTTGAGTTCTTCCAAGAGCCAAGAGTTCTTCCA
AAGCTATAAACCCCTATCATTTGGCACTCTCTGCTCTATGGAAGCAGTGGCTTCTCATCTCTTTTCAAGT
ATAATGCAAGCTCTCACCTTAGCTGGCATGGCCCTGTGGGATTGGCTTCCCTTGTCTTACTTTTTCTT
GTTTCAAGCTGCTGTGACCTCTCTGGTCTTTGGCTCTTACTAGAAACCTTTGAACCCGTTTCTTCCAGT
GTCAGTATTGTTGTTGTTGTTTCACTTCTCACTTCTTCTGTTTCTACAGCACAGAGAAGTAGTA
GTCCCTGATCTAAACACCTCTCCAGCAATTTCCAGCTTTGTTTTTCCCTAGCACTTACCATTATCAG
ATATCATATATTTATTTGTTTATTTGTTTCACTTCTCACAATAATATGACGTTGTGAGGATAGGGATTG
GCTTTTTTGGCCAGAGCAGTGCCTGACTCTCAATAACTTTGTTGATTAAGTGAATGAATAAATAAAT
TAAATTTGATTTCAAAGTGTATGAGCATGTGTACATTTTACATAAGTGATACATGACATTCTTCCATTCT
TGGGGGCTCTTTTAACTATTTTCAACAGTTTGTAGTACCTTTTAAATAATCATGATGAAGATGATTTGAG
AGCTAATTTTGGTAGGAGACAGCAGTTTTAGCCTGTCCGCTCCATGTGCAGAATAATAGCCTATTTTAT
ACATCTGATATTCAAGCACTAGATCTATCAATAGGTAAATAATTTCCAAAAATAAAGCATCAGTGGGA
AAACAGGGAAATTTATTTTAAAGAAATTTCTAGACCAGGATGTGTGAATTTGTAAATCTTAATAAGA
AACGTTATAGCTGATAATTTCCAGCAATTTACAGAATCATGATCATATCCATAATGGATCAGTAGAGGCTCT
GGCTTATATAATAGCTTGGCTCTCAGGATTCTAGAGCCCATATGTAACACAGAACACATTTATATTG
ATTGACAGTGCATGTAGGTTTCTACAGATTGTGCCAGTCAGTGTCTTCTAAGGCAGTTATGCCATGGTAA
TTAAATTTATGGGCTCTGAAATCAGCCTGCCTGGGTTCAAACCCAGCTTCATGTGTCAGCTTCTTGGC
TGTAATAAGGAATACTAATAGCACCTGCCTTGGCTTTGAAATTTACATGATGAACCTTTGTCAAGAGC
TTAGATGAGCACTTGGGATATGGCGAGTGCTCAATAAATGTTACTTTTACCATCATCATCATATTAT

FIGURE 1, page 59 of 93

TATTACTGATTGCAAGCAAGCAAACTGGTTCTCACTTCAGCAGAAAAAGAAATTACTGAAGTAATTTTG
GTTAGATACAGAGATTTAACGTGAAGGATGAATAACCAGACTTGGAAAAAGGTGGAAACCAAGAGGCAGT
CAGCATGGCATTAGCAGCCAGCAGCTTCACCAGTGTGGTGCCCTGGGGGACGCCTGGCAGGAGCCACTGCCCT
TCACTCCCTGGAGTCGAGATTTACACAGGACAGCAGACTGAATTTGCTTGTCTGCAGACTTCACAGTFCAC
AGGGAGCAGGCTGCATGCAGGTGGGGCCAGGTCACCTACCTTCACCCTAGAGTCTGGAGGCCACAGAAAA
CAGTAATTTGCTCTGTAGCTTTTGTGATGGAAGCAAGCTCTGACACCCACCAACTCACATACTAGGGAA
TTCACAAATGTAGGACGGCAGCTAAGATGTCTGGAAACCAAGAATTAACAAATGAGTATTACACCAAT
AGTTAATTTATTACAGATTTCAATATTTTCCAAAAACATCTCAAGAAAGCAGCTCACTTTAATATACT
CCAACAAATGATGAAATCTCTCCTTGGTCATCAGCTTTTCTAAATTTCTGTAACCTTAGGTGATTCTGAA
TTTCTTAGTGATTTCTGAACCTCTAGAAAGATCTGAAACAGAACAGTCTTACTTTGGGATGTATTCAATC
CTAGAGATCAGTCACATCAATCTGTGCCCTTTTTCATTATGTAACATGAACACAGGAGGACCTTTTCCAAC
TGCCCTTGGGAAGCTGCTCTCAACACAGGTATATTATCACATTTAATAAGAAAGATTAATTTTGCAT
GTGACCCCTTCATCTGAGGTTCATCGGGACTGTGCTGTCTCCCAAGCTCCACTGTAAGGGATAGACAACA
ACCTTTGTCTCCCAGTCATTGTAATCTGTATCAGAGAGCATCATTAGATGAATGAAGATGGAATGTTCTC
ACGGTCAGCAGAGTGGGGAAGGCAAGACTTGCTGATTGGAAGCAATGAACCATGTTCACTTCTAAGGCTTG
GGGAGAGCAACTTTTGGAAATATGAGCCCTAACTTGCCATGTAGGAGAAGTTGGGGGGTGGTAATTTG
GGCACCCCTTTATCTACTAAACGTAATCTTTACTTCCCCACCCTCTAATTTTCTCAGTTGGGCTTGAAT
TGTTTTTCTGTTTACACTTTATGGGAAAAGAAAGGGAATCCTAATAAGTCCATGCCAGCAAACTCT
AGAAGAGAAGAAATAAGAATTTCAAAATGACAGTTTGTTAATGAGAAAAGACAAGGTTAAAGGATTTTGT
AAACAGATGACCAAATAATTTTGGAAACTTCTGCTTTCTGGCCAGGTGGACATAATAGGGCTACATTT
ACCTTCCCACCAGAAAAATATAATAACAAACAAAACTGGACAAAACCTGGACATGACACTTGTGCTTT
AAACCTTGGACATCAATCAGTGCAGGATGTTATTTGTAAGAAAGGGAAAAAATTGGGGTGAGCCTTCT
GATTGTTTCCAGACTGGAGAGAAGTTTTCAGGCCACAGCAAGTGGGGGAGGAACCTAGGTGTAAGTATATGT
ATAAGGTAGCATCATCATGATGGCCAAATGAATGGCACAGGAAAGAAAACTACAAGACAGGAGGATG
GGCCACAAAACCTAGAGTGGGGTCCAAGATTCACTATGGATAAAATGGGGTGTTAATTTGGTTTCAAGGC
CAATACAGAGAGGAGGCATAGAAAAGAACCAAGGTGGTGTTGGGAAGTAGTATAAAAAGGGGCACAGGCTT
ATCTTGTGTTTTATAAAAAACAAGGTTTTTGGAAAGGATTTGTAGAGATAAGTTTGAAGAGTAGTTTGAAG
ACTATGTGTGGAATTCATGAATCTTAGAGTTGATTTTATTCAGGAGATCAGTAGCTTTTAAATGTAA
AATAAAACCAAGTAACTCTATCTAAAAATAAATCTTCCCTAATCCCAATATAAAAAATCATATAAAAAG
CGTAGCTGCTCTAGACAAAATGCGGGGTATGAGATGACCAGAAACCTCAACAGCACTACCTCTGGTAGCC
CCATAGAAGCTGCCAAGAGTTTTTCAGAGTAGTAAATTTCTGCTGACGGCTAAGGCAGTCATTTAGTGAT
TGGAAAGAGAGCGGAAGATAGACAAGATCAGTTAATTGGTTGGAGGAAGACTGAAGATAGGCAAGGAGT
ACAAATTAGGAAGCTGTTGCAATGATCTAGGCAAGAAGGAACCTATGAACTAGGAGGGAGGCTTAAAGACA
GCAAGGAGGGAACCTATAGGCAGGGACATGTGAGGAAATGCTTAGTAGTTAAGGTGAGTTTGTAGGTATGA
AAGGAGAGAGGAAGAAGAACATTAAAGTAGCAATTAAGTGAACACAGATAAATTATAGCTCTCTTGACCTGAAAC
ATTTAGAGGCTGTGATAACACTATAATATAATCTAATACATATAAATACGTAGTATGATATATAT
CATGATATAATCATCTTACCAATGCTTTACAGTCAATGACATTTGTGGTACAGAGACTTTGGAGGCAGATA
GACCTCGATTGTAACCTCTGTGCTGCCGTGGTATGACCTTGAGCATGTAGTTAATCTGAACTTCTTCT
TTTTCTGTTAAATGGGGACAATGCAGACTAATTAACCTTATAGTACTTTGAAGGGAGAGGTGTAGAAATGA
TACTGGGGAGCTCTCCACAGAAAGTTGTATTAGTTATGTCTTTATTTCATTTAATGAATAGCATT
CCCGTTTTCTTTAAACATGTTGAATTTAAACCTCTTAGTGATTTTCTTGTCTTGCCCTTTAATACCCCA
TGAATTTATTGAGAAACAAAAGAAAGTGATATGCAAAATGTTTGAATATCTAATATACATGAACGTAGT
CTAGGGAAAGTGGAGAAATAAATCTTACTGATATTATACTAGTTTTTTTTCTGGAAAGCATAGCATATTAAG
AAACCTCATTTCGAATGAAGAAATAATTTAAATTTAGAGTGCAATAGAAGCATATCCAATGAATCTTAT
CCTAATGAATACTCAGGCAGTATGTTAACTTTTTCTGAGATACAATAGCCAAAGCCAAAGAAATTTAAAGAA
TGAAAAAAACAGATGATTAACAAACCTGTGAAGTAATTAGAGGTAGCTTTGAAATGCCTCATTAGGCA
TTTGACTCATTAGGACAGATCTTTTATTTTAGGGCCAGGACATAAATTTAAGCAAGCTTGATGTGCTCT
TAGCTTTTTTCACTTTGCCACAAGTTGTGCGCTGTACTTGCCCTTCCACTAGCTTCCAAGTCCAGGCCGA
CTTTGAAGAGATTCTTTAGGGCTCACCTCCCCTGAGAGTGGCCCTGTACCATGCTCTCTCCCTTTCCCT
CTCATTCTTATGCTGAGTTTATTGTTTTAATAAATCCCATAAGTTAACCTTCTTAGGGTGGATTAG
AATCATTCAATCCACATTGATTGTTACTAAGTAGAATAATTTAATGAGCCTTTCTAAATCTTACAAC
AACGTGACGAGGATATATAGTTGCTTTAACCAAGGAGATGAAATCAAACTGGTGCGATTGCACACTT
ACAGTGGGCTTGCAAGATGAAGAGAGCTTGGTATCTCGATCCCTTATACAAAACAGGTGGGCTTGTGTA
GAAAAATCTTCAATGATTTGTAAGTTTAAATTTTGAAAGTGGTCAAGAAATTTGCTTTGATGCAA
ATATTGTCTAGTCAATTACATACTTGAGCTATAATGACAGGTACACTAGCTATCCAGGGTGCAGCATC
TCTATTGTGCTGTTGAATATACTGCTCAACCTATCTGGAATTTGGCATGTATGATGAATGACATGT
ATCTTGTGTGATGGCATTCCAAGCCAACATGTTGGTCCCTGCAAGTAACTTCTTGACTGTCAAGAGGC
TGCCCTGTTAATATTTCATGATCTAAACTAATGTTTCTTTGTTTTTCTCTGCTTTATGAGCTGG
TAGTTTGTGACCTTTTGGCTTTTCCCCTGAGAGTTAACAAAAGTTAGACAGTTGGGGGGTGAACTTAAGTA
AATCATATCACTCTATGTTGCTGCTCTACTACTAACAAATCAAGAAATGCTTTGTTAGAAAGCAAGGAATG
AGTTTTAAATTTTCTCTTTGAATTTCAATATCCATGCCACTCCTGTGGTCCACCATTCTATATAATTAAG
GAATAGCTGTATGTTCCATAGTGACACAGGCTGTTAATTTCTGATTTCAGTTTTCACTTAACCTTAGGGT
AAAATTTGAATAGAAGTCGCATCTTTTTTTTTTACCTTCTTCCACTCAATTTCTAGTTAGATATTTTGA
ACTCTTATAAAATGCTATGCAATATTATCACAATAATGTGCAAAATTAATCTCCATCCCATGTAGAAAGG
ATCCATTCTTCATTGAACCATACCTTTGGGATCCTATCAGATGCAGTTGGCCATATAATATTTTATATTA
TTGTTTTTTTTGTTTTGTTTGAAGTTGTACCTACATAATGGATTAAATCAAATCTCTGTTTAACTG
AAACAAAATCTGTTTTAAGCTGAAGCAAAAAACAAATCTCTGTTTTTTGTTGTACAAAAACAAAAACAA
TAATATTTTTGTTTTGTTGTATATCTACAGGCACTTTGGAATTTGGAATAATCGTTCAATTTAGGGTA
TATATATTAGTCCATTTTCTACTGCTATAAGAAATACTTGAGACTGGGTAAATTTATAAGAAAAATAG
GCTTAAATGACTCACAGTTCCACAGCTGGGAGGGCTCAGAGTCAGGCAAGGTGAAGGGGAAGCA
AAGGCATGCTTATATGGCAGCGGCAAGGAGATATAGCAAGGGAACCTGCCCTGTATGAACCATCAGA
TCTCATGAGACTTATTACTATCATGAGAACAGCAGGAAAAACCTGCCCCCATGATTCAGTTACCTCC

FIGURE 1, page 60 of 93

61/139

CACTGAGTCCCTCCACATGTGGGGATTATGGGAACATAATTCAAGATGAGATTGGATGGGGACACAG
CCAAACCATATCAGTACATTAAAGAAAAATATTTGTTAGCGCTAAGTGAATCTACTTTACCTACTTGATT
ATTTGATGATTTTATAAATAGTCATCTCTTTCCCTCATCTTTCCAGTCGTATTTTGTGTTCCAAAGCCAA
AACCTGTGTGTTCTTGTATTCAACAACCTGAATCATACAGTTGTGAGACGTAATGGGTGTGGTGGTTCCA
CTTACTTCTTTACATAGTACTACAACATAAGCCATCTAAGTAGTCTGCTCCTAAATTCCTCCAAGAAGGGA
AATATCATGATTTGATTTAAATGTGACATCCTTTCTTAGAGAAGTTTTCTTTGTCTCCTTCTTCCCCAGT
CACTTCCCTCCCATCCACTGTGCTTTTCGGCAGTTTCATTCGTTTCAATTAATTCATCAACGAATATGAATAA
CTTTTGATCAATGTCTTCCCTCCCAAGCTGAAAACCTTGATGGAGGGTAACATGATCTGTCTTTGTTTA
CCACTGCACTCTTCCGTGAATATACATTGTAAGTATTGAACGGATTTTACTAAATGAACAAATACTTTGA
TAAATATTTTTGATTACTGCCAATATCAGTTTCTGAATTGATTCTAAATTTCTTCTGCTGGAAAGTAGA
TTAGCGTTAGTATGACTGCTGAAGCCTTTTAAAGTGGGTGGTAATACTACGTTTCGTTTGTTCATTAA
CCTAAGTGCTGTTCTTTGGAATCTTTTAAAGTAAGATAAATTACATTCATGAAAGAAGCATATTTATTTT
TAAAGTAACTTTATTTTGGAAAGGTAAATGCTTGTGTAGTTATAATTGGTTACTCTTGATTTACACCTTA
GGAAAAACAATATCACCTTCTAACCATTTCTTTTTTAGTCAAATCTCTGCTTCTATTCTCTCTGTAGA
TCCGCTATTAAAGACTGTAATCAGTCTGCATCTTCTGTAAGGCTTGATCGCATTTGTAATTTCTTTC
TAAACTTGTAGAGTAGGTGTATAAATCGTATTTGGGTAATACACTGACTAATACTGAAGAACCAGGCATT
TCTTACCCAGTCTCACACGAAGTAGGGAATACAAGTCAGAACCTATCTTCTCAAACTCTGACCTC
AGAATTTCTGAGAAATCTGAACCTAAAGATTCTTTGCTTTTGACATTTTCTCTGGTGTCCACCGC
AAGGCTCTTGCTCTTACATTTTTTTTTTTTTTCTAATGTTTCAAATAGAAGATGGTAGAGTCATATAGTA
CAAGCTCAGCATCGGAGGGCTACTGGAGGTCAACTAGTGCAAATGCTTTCTGAATAATGGAATCCTTTG
GGAATACCCCTTGAAGTCTTCACTAGCCTCTTCTTGGAAACCCCTCAGTGATACCCCTCATCGTCTCC
TATGATGGCAGCTTCTATCTTTGCTGCTGAGCTCTGACTATTACAACTGCTTCTTACATTGAGCTGTAA
CTAACTAAAAAGTTTCCACACCCCTGCTTCTATTTTAGCCTTTGGGCTCATAAAGAACAAGTTGAACCCGT
CTTATGCAAGAACCCATCTACGGGAGATGCTCAGGTTTCTCCATGTTTTCTCTTAGGCTAACCC
CTTCGTTGTTCTCTACTTACTCATAATAACCTGATTTTCATGCTCTTACCCCTCTTGTACTCTAAC
TTGAGTCACTAGTTTTCAGGATCCAGCAATTAAGTGTGATACATCAGGTATGCTCTGATGAGTTGAGAGTA
GAGTGGACATAGCATCTCCCTTAATTCAGATATTGTGATCTAATTGGCAAATCTGGCAATAAAGTTGAA
ATGCTGATCCAGGACAATGGCTGGTCAAGTGCCATTGTTCTCATCTTTTACTTTTAGGTGTCCCTCAAT
TTGTTAAGTTAGTACCTACGTAATGTCTGAACTTGTAAAGTTGTACCTACATAATGGATTAAATTC
AAATCTCTGTTTAACTGAAAAAACAAGCAACTTCTTTTCAGAGCCAGAATCTGGAATCATACGTAACAG
AGAATGATATTGTACAAGTTGCTTCACTCTTTAAGTAACGGTTTCTCAAACCTACAGATTATTGTGAG
AACTAAATTAGTTCTAAAGTGCTTCCATGTAAAGTGATGTAAATGCTTAAATATATAGTAAGTGCTGA
ATGCATATTAGAATAATAAATCTTTATTATAATTTTACTATTTTCATGAGAAGTACTTATTTTATA
CTGAGCAATAGGAAGAGTTCATGGCTTCTCTATGTTTGAAGTGTCATTTAATATATTATATATATAA
AACATATATATATTTCAGTCACACATTTGTCCAAATACCTTGACAAATTAACAAATAAGACAAAT
CTCAGCTAGTTATTTGTATATAAGTAATAGAACAAGTGATATGTTATAAAGAGCATTTATTTCTCATGT
CTTTGATATTAAAAATAGTTGTATTAACTTTTATCAAAACGATTGCTTCTTCTATATAAATCTAAGAA
TATGCTGTCTGATAAATATTGGAGAGTTAACTTCTTGAAGTATAGAAGCTTTTGTCTTTTAAAAA
AGTTGTTTTTTTGAGATGTTAATACATTTTCAGCAGTACAGTATGGCCTTTTTCAGGTTAAGGTGCTGAG
CCCAAACCTCAAAGAATCACTGCAAAAAGATTGGATCCCCCTCTTCAACCCATTTTCGTAATTTAGTTAG
TGAGAACCACAACCTGGCTAAACCTTTGTGGGGGGCCGGGCACTGTGGCTCATGCCATATAATCCCAGCACT
TTGGGAGGCCGAGGCAGGCAGATCACAAGGTGAGAAATCGAGACCATCTGGCTAACACGGCGAAACCC
CGTCTCTACTAAAAATACAAAAATTAGCCGGCATGGTGGCAGGTGCTGTAGTCCCAGCTACTCAGGA
GGCTGAGGCAGGAGAAATGGCGTGAACCTGGGAGGCGGGGCTTGAGTGGGCGAGATCCCGCCACTGCAC
TCCAGCCTGGGTGACACAGCGAGACTCCATCTTAAAAAACAACAAACAAACAAACAAACAAACAAAC
CCACCTTTGGGGGGAATATCAAAATAAAACAACTCTTTTAGAATTTTACAACCTTTTATGTTAGGAAA
AAACAAATACATTTGTGAAAAGCTTAAATCCAGTAAATGACTTGAGGGACTTGGGGCAATCCTAGGGTG
ATGAGGAGCAGGTTAGTAACAGTGAAGGACTTAGCACCCAGGGGGCCAGAGGCTGTAATATACCTTATG
AGCAAGTCATTTCTATTAGTCTTGCCCATTAAGAAGTCTACTTGAGCTAAATGCTTTTAAAAATGCCCT
TTTAATTTACTATTAAAGAATATTCTAGCAGAAGTAGTCTTGGATGCTAAATCTATTTTAAGAATAA
CTAAATTAGAATTTCTGTTTCTTTTATAACACCTGTTACACACACACCCCTACCTAGTGTGTCGGAATCA
GTTTGTATGGGCTCACCAGGCTACTGTTCAATTTTCAGGAGTTTGTAGCCATTGATGTCAGACAA
GTGGCCTGAAGTTGTTATGGTGGTGGTATTTACACCATGAAATTTGGCATGTTATGGTGGTAGTATTTA
CACCATGAAAACGTCTACAAATAGAAATCTTTTCTTCTCTTGGAGAGCCACTTGTGTAACACTTAC
CAGCTCAGCTGTGCTTGAAGTATTTCTTCAAAATAAATGAAAGCTGGTTAGCTTTGAAAAATTTTGTGA
TAAAGTTTACACGGGAAAAAATAAACTAATTTTTTTTTTCCACCTGTGTTTTCAGGGATACGAAAAGA
CCGAAGAGGAGGAGAATGTTGAACACAAGCGCCAGAGAGATGATGGGGAGGCGAGGGTGAAGTGGG
TCTGCTGGAGACATGAGAGCTGCCAACCTTTGGCCAAGCCGCTCATGATCAAACGCTCTAAGAAGAAC
GCTGGCCTTGTCCCTGACGGCCGACAGATGGTCAGTGCCTTGTGGATGCTGAGCCCCCATCTACTA
TTCCGAGTATGATCCTACCAGACCTTTCAGTGAAGCTTCGATGATGGGCTTACTGACCAACCTGGCAGAC
AGGGAGCTGGTTACATGATCAACTGGGCGAAGAGGGTGCCAGGTAGAATGCGAAGCGCAGCTTTTAAAG
AGTCAATAGCTTTTCAAGAACTTGTGTGATGTCATGGGAGAAATAGTGGGGGAAAAAGAACAAATAACA
TGTTATGTAATTGGTTTCAAGGTTACAGGAGATGTGTTCAATTTTTCAGTATCAATACACTGTAATTTTCCA
GGAGATTAGGAATAATATTTTAAATCAGAATCTAGAAGACTGAAATCTTAAATTGACATAATTTATTT
TTTAAACCATCTCATTTACCAAAAGATTAGGGTGGACACTACATGGTAAACTATTTAATAGTGTATG
TTCACAGTAGCAGAACTTTTAACTAAATGAACTACAAAAGTTTGTAAATATTAATGACCTTTGTGAA
AACATCTCAATTATTAATCAACGATTTTATCTTAAAAAGATTTTAAAGATTCCGGTGTGGTGGCTCGTGC
CTGTAATCTTACATTTTGGGGCTGAGGTGGGAGGATGCTTGAGCCAGGAGCTTGAGGCCATCCGG
GGCAACGTGGCGAAACCTGTCTTACAACAAATTTTAAAAATTAGCTGGATGCAGTGGCACACACCTG
TGGTCCCAGTTATGGGGAGGCGAGGTGAGAGGATGGCTTGAGTCCAGGAGGTCAAAGCTACAGTGAAC
CATGTTTGTGTGGAGTGCCACTGCACTCCAGCCAGGTGACAGAGCAAGACCGTGTCAAAAAATAAAC
CACACAAAAAGAGAAAGATCTTTATGGATTAAAAAGATAATAAAGTGTATTTACTGAATGCCAATT

FIGURE 1, page 61 of 93

ATTATATCCAACCTGGTGTATGCTTAGTATTTTAGGAGAAAGAGAAAGGCAATGGAAAAATAAATTAAGGT
ATCATCCCTGAAAGAAACCTTTTAGAAAGACACAGTGGCTGAAGTGATACCTGTTCCCTTCAGTTGATTCT
CTCAGAACCTGGTGTCTGGTAAATTTGGACTGTTACTCTGTTATTTCAGGGAAGAAGAACTCAAGTTTGTGA
TGGCAACAAGACTAGAAATGACTTTCTCCCTCCCGCAGTGATTTCGTTAGAGGAGTAATGTAGATATAAAC
CGAGGCAAGAAGAAGCTAAATTTTTTTTCTGGGCTTATAGGTTAAATGAGTGATAGATTTAGTTGGAGGT
TTTCTCATTTGGTTTCTTTTAATAGATGAATTAATGTTTCCTATGAAGCATGAATGTTTATATGAA
ACTAAAAAATGTGGAGTTTGTTACTTGTCATTTCAAGGGCTCACTGCTGTATAGGCCAAGTGAACATTAT
GCTGCGCCTTAGAGAATTTTACATGTAATTTGTCATCTATCAGTATAAACAATGTGGCCGTAGAATAAGG
AGCCAGCAGTACCAGAACCCAGCCTTGTTAGAGGCCACCATTTTGGTGGTTGAGTGGTTATTAGTTTACA
TGGAAAGCATGGAGAATAATAGGCAATGTAGGTTTTCAGTGTCACTGCAAGTGGCAACAACAAATTTCTG
GTACCTTTCAGAATGAAAGTTTCTTGAGTACCTACATATTTTAGCATTTTTCATATGAAGCAGATACAT
TATAAGTTAAATGTTTGAATCTTAATGTAATAGTGGCTGTAAGTTTTCCTTTATATGTTGTTATTGCTGTT
TTCTTATATTATAGGGAAGAGAGAAACAACAACAAGCAAGAACTAATGGTCATATATTGAGAGCC
ACTCTTGGTTGCTGTTCACTTTATTTTCTGTAAACATATATTTTCCCTTATGAATCCTGGGAATATT
AGCTCTGGAGCAGTGTGCAACTCAAGTACAGACATTTTTCATGTGTATCAGTATGATTTCCCATCATGACATT
TTTTATAAATGCTTGAGAGCAATTTTAAACAACGTGAATTAAGCTCAAAATACATTACCAGTGGTTGAAGA
ATTACATCAATAATCTTCTGAATTTAGGAATAAAATGGAGAAGTCAAGGAAAGCCAAATATTATACACA
GGCTAGCAATAGTTAAATACAAATATTAAAGCCAGAGCTAGACAAAATATTAGGCATGAGATGTGTAAC
AAAACCACTCTGTAACCTCATCATGTCTGGTTTAAAGACCTGAATGATTCCAAATCCTTAGACCAATAA
ACTATGCTCTTCTTACTTGTATAATTTAAAAAAGAAATATTAAAGCCAAAATGAAATTTATGTTATGTGTG
TTTGTGTGTGTTCCATGGGAATACAGCTGTTGTAATCAAAGGCCACTTGCCTGACCAAGCAGATAAAA
AATAGTCATTGATTTTAAAGAGACTAAAAGTGAGGGAAGAAAAAGCTCTGCAAAAGCTTCACAGATG
GTTGTCAAACCTTTTCAGAAAAATAGACAAAGCAACATTTTGAAGAAGGATTTATATCTTTTATATCTCAA
ATACCATCTGTTATTTTAAAAACATAGCCACCATGAAATCTGATATAGACAATATAACGTTTATGAGA
TAATAGTTTGAGAATGACAATAATAATAGTAAGTTTAAAGAGGAAATTAAGCCGGGCACAGTGGCTCAT
GCCTGTAATCCAGCACTTTGGGAGGCCGAGGCCGGGTGATCACCTGAGTCAAGAGTTCAGACCCAGCC
TAGCCACAGTACGACAAACCTGTCTGACGAAACAGTACAAAATTAGCCAGGCTGGTGAGCAGACATCC
TGAGCTCCAGCTACTTTGGGATTTCTGAGTGGGAGAAATGCTTGAACCTGGGAGGCACAGTGCAGTGCAG
CCGAGACCCCAACAATGCACCTCGGCCCTGGGCAACAATGAGACTCTGTCTCTAATAAATAAATAAAGAA
GGAAATAGTAACAGTCTATAGTAAGAAGATAGCAAAATTTTCAGTTCTAGAAATACCCAGAATTAGCTAT
ATGATACAAAACCTCATGAACACTTTGGATATCCTCAGATACTCATCAATAAACAACAACTATGA
ATTGACTCTATTGTAATGATGAATTTTAAACAAAATGCTCAATCTTTGGGCTTAGTACTCTAGAAG
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63/139

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65/139

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AGGCATGAGCCACCGCGCCCGGCCCTATTTTCTTAATCAGCGATATATACAGGCTTGTGAAAAACAT
GAAATGTTAAGAGATTATGTAATTAAGAGGCAAGCTATGATGTTCACTCCTCTAAACCACTTCT
TAGTAGGTGAACATTGTTAAACAGTTTTGTGAATCTGCTTCCAGATTTTTTCTAGGCATGTTTATACACA
TATACACACATAATTTATTTTACCAGTTGCGATCATGTATCATCTGATCCAAAACTCGCTATTTTTCA
GTTAATATGCACTGCTCTTTCCAAACCATAGTATATATATATCTCTAAGAATTTTTCAATCTGCT
TATAGTTTTAAACATATTTATTTTACATACATATGTGTATAAGTTACTTATTTGCTTATTTCTTTGAA
TATCTTTGTCTAGCTTTGGAAATCAGATAAATAAGTACAAATGGTAAACAAATTTTATGTTGAAGAT
ATATAGAAAAGTACAAGTCTCTCTCTCATCCACTCTATCTCATTACCTAAAGGTTATCTTAGAGCT

66/139

TTATATAATACACCCCTGAAGTTTAGATCATTTTATTGCGCTCCCAATTGTTGAGAGTAAGGAATTTAGTA
CATATACCTTTCCCTTCACCTTTCCTACCCCTCTACCTACTTAATGAGTTCGATTATAGTTTTTCAGTTCAC
CCACTGTTTAAATAAATATACCTATATTTATAATATACCTATATAATATACCTATAATAAACCTATATTTT
GACTTATCAACTTTGGACATATCTATTGGTGACTTGTGATGAGAGATGAAATAATTTGTACATTTACCCCT
TCCTTTCCATTCTTTTCCCTTACCCATTCTCCCTTTTGGCTAAATGATTGCTTTTAGGTTGATAAGGT
TTATAATAGCTACTGTTCTGTGGTTAATAAAATTTGTTTCATATTTTATGTGAAATTTGATTATACAACCT
AGCATTCAAAACATTATTATGTAATATTAGTTACTGTAATCACACAGTGACGCTCAAGGAGGTATTAC
TAAGCATACAGATCATTTCCCTTGTGATCCAACCTCAGCAGTCCCTTGTGCTGCTTACCTCATCTTTCGTG
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CCTCAATAGGCTTTTAAATTAAGTCTCATTTTATCGGGCTCTGTGAAATTTTGTATGTTTGGCT
TCTTTTCTCTTTTGTGTCTCTCTTTTCTCCTTGAATGTCTTCTGATAGATATAGCATTTCCCATTTATC
TATTCATCTCTTTCAGATTATCCTACATTTTCTCTTTGTTTCTTTTCTTACCATTGTTAGAATTTCTCTT
ACACGTAAGACATCACTTACTAGATCTTCACTCATATCCTTTTATTATTACAGTCTGTGCATTTTAAAT
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AGGCACGATGGCGAACATTTTGTACTGGCTTCTCAAGCCTCAATGCCAGAGTTATTGCTCCCAT
CAGAAACCCCTTCTTTTGTCTATCTCTCACTTCCAATGAAGTTCCAGCTTAAATTTTGTCTGCTACTGTA
GTGGGACAGCAAAATCCCTATTTTCACTGATCATTTGCTCAAACCTCTATTGACAATCCTGCTTGCATTC
CCTTATTTAGAGTGGGATGAAAAATAAGGCTATGAAGGGGGAAGAACTGATCCACCATTTCTCTTTT
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CTGTCTATGATGGGCATTTGGGTTGGTTCCAAGTCTTTGCTATTGTGAATAGTGCCACAATAAACATACG
TGTTCTATGTCTTTTATAGTAGAATGATTTATAATCCTTTGGGTATATACCCAGTAATGGGATTGTGGG
TCAAATGGTATTTCTGGTTCTAGATCCTTGAAGAATCACCACGCTGTCTTCCACAATGGTTGACTAATTT
ACACTCCCACCAACAGTGTAAGGCATTCCTATTTCTCCACATCCTCTCCAGCATCTGTTGTTTCTGAC
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TGATCAGGGATGATCAGCTTTTTCATATGTTTGTGGCTCACAATGTCTTCTTTGAGAAGTGCT
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AGCATTTCTCTCGCAGGCACACCTTCAGGCTGGTGGGAGCAACTTGGGCCATGGACTGGAACCATGTCA
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CGTCTGTGGTAAAGATCTGGAGGTTCTTAAGCTCTCTCTGGCCTCAAAACCCACAGCAGGAATTTCTC
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FIGURE 1, page 66 of 93

67/139

TTTGGGGACAGATCTCAGTTAACTAAAGAAATGCTATGGCACAGAGTACCTTGAATCTCCTCTAATTTAT
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68/139

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69/139

AGCCCTTAAGGACCAGATTAGACCAGCCATCTGCATCATGTAGCATGTCTGGGTACCTTTCCCAAAGA
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CTGTTTAAATTCATTAATAAAGCCTATACATTGGCTGCCCTACTGTGTGCCAGTTGGTGAAGATATAAAG
ATGATTAAGGCAAGGGTCTGTGCTGACATGCCTAATGGGCAGGCTGACACACCTAAACGCCAGGGAAAAA
GAGGGATGAGACCTGGGCCCTCTGAAGCCCTGGCCACCTGGCTCGAAGCTCACTTTAATGTGCTTCTGGGT
GTATTCATGACTTTTAAAGGCGCTTATGTTTCTTTCTGGTAAAGCATGTTTAAACATGCAAAATGCTT
ATTTCTAGTACGCTTTTAAAGTGTCTTATAGAAATGCTCAGAACAGTGTGCTTAATAGAAATATAA
TTCAGGTCACGTAGGTAATATTAATTTTCTAGTAGCCACATTAAGAAAGTAAAGCAACAGGCAAGTT
AATATTTTCTTCTGAGATGGAGTCTGCTTTGTCAACCCAGGCTGGAATGCAGTGGTGTGATCTCG
GCTCACTGCAAGCTCCGCCCTCCCGGGTCAAAGCCAGTCTCCTGCCTCAGCCTCCTGAGTAGCTGGGACTA
TAGGCGCCCGCCACACACCTGGCTAATTTTGTATTTTGTATTTTGTAGTAGAGACGGGGTTTACCCTGTTATCC
AGGATGGTCTGTTAATTTAATAATATATTCAATATTTAATAATATATTCAATTTAGTCTATATAAAAA
AATTAGCATTTCAACATGTAATCAATAGAAATATATTATAGTCAACTATTTGCAATCTTTGTTTGTAC
CATCTTTGAATTTCAATTTGTATTTTATACCTTACAGTGCATCTCAATTTTAAATGCTAAATGTATCGGAG
ATATTGATCTCTCTTTAGCTTTAATATATTTTGGGTTGAAAAAGTAAATTCACATAACCAAGTCTTTC
CAAAATACTTGAAAGTGTCTGATAACTGAGTTATCAACTTAAAAATGTAAGTTAATGACAATAAATG
AAAGAAAAATTCTGTTCTTAGCTGCACTGACCACATTTTAGTGTTCAATAGTCGCAGGTGGCCAGTGGC
TATCATATTTGGATAGTACAGCTTTAGAATGACAGTTCAGTGCAACAAAGTGCATAATAGACTCATGAAT
GGAGCTCCGGGAAGTTAAGAAATGGGATCAATGAAGTGGGTCTTGAAGCAACCAATAAAATTCACAGCT
AGAGAGGAGGAGGGCGACTACTCCAATTCATCTTTTGAAGCATGTGAAGGAGCAACAGTAGACTTCTT
TAATTATTTAATAGTAATTTATTGAACATGAATTATGGGAGGTGCATGGTGTGGGTGCTGGTGAGACATA
GTTCTGAGCTCAAGTAGCTTGGTGTCTAATATTCATGGGCCATTTTTCAGAAAGGATGGATATGTGT
GTATGAGTGGGTGGTCCAAATGCTGTGGCTTCTGAGCTTAGATTCCAGCTTGTCACTTCAAGGTTA
CCTGTGTAATAGGACTTTTGTAGCTGTAAGTAAATTTACTTTGCTTATTTATTTTCAATGGAAGAAAG
CTTTTTTAAAAATAAATCTCATCTTATTGCCTATGATTGGCCAAGACAACATGGCCCATACAGAAGGTT
TTTGATGGCTTCTGAGGTCTGTTATCATTTGCTTATTGGCATTTCACTGTCAACAGGGTCTGTGCAAA
TTCCATCTCTGCTTTAGCTCTTTTACTTGAATACCTGGGGCAATGGCAGAAAGTGGTTGCTATTTGTAC
CTTTCCAGGATGTTAGTCTGTGCTTGGAGCAATAGAAATTTAAGTCAGATGACTTGTATCTCTGTC
CAGTTAAGACCCTTAGAGAGTCTCAGCATGTTGCTTATTTTAAATTTCAAGTCCCTGGTAAGGATCAA
GTAAACTCCCCAATTTGCAGATTTCTATCCAGTTGACTATGGATTTGCTGTTGCTTGTGTTCCACCAA
CTCTCCCTGAAGATGAGGCGCACAGACAGACAACCTCACAGGCAAGAACAGCCTGGTCCATCTTGAAGAT
TCTCAAGACTATCTCCACAGATAATTGTTCTACTTTTAAAAATATTCAGTAAAGGGAATTTTGTCTGT
ATCCTTGGTTGTGTTTTTGTATCTCATCATCTTCTAGTTGTAGGAGGCTTTTCTAACATCTAACCCA
TATGTCTGTGTCTCATCAGGTGTTCTATTAAGGCTACTTCCCATCAATCTTAATTTTTTTTTTAATC
TTCTGAGATGTATAGTTAAGTTGAATCAGAGACTTTCATAAAATGGTAAGATGGCCATTTAAATGCAA
CTATGAGGAAATAATGTAAGCAGGATTCATTTGGAGAACCAACACTAGCAACAACTAATCTGGTAATCA
ATGTTGGGACTTGAAGTTAGGCTAAATCAATAGTAATGGCACTCGTATGTACAAATGCAGAACTTTTTA
CACACAATGATTTTTCCCTCTGTTATTATACACTAGCTGTGTCTGAGTAGACAGTCCAGCTCCACTACCT
GCAGTCCACCTCGGCTGTGTAATCTGAGCACTGATGGGCTGTATTGTACGTATTACTTCTATGACAC
TGTTTTTTTTCATCTGTGTTAGAAATGTCTTTCTTTCTTGAATAAGCTGCTTCAATTTCTTATAGACAGATT
CTGCTTTTATGACCCTTGTCTTACAAAGTAATCTCTACTCATGCTGAAATCTCAGACAATTTTAAACAAA
TATTTAGAGTACTTAATTTTCTTTGAATCTAAATATTATCTTCTTTAGTTCACCATAGTTGGATATT
TTGAGATAACTGTGGAGGAAACAGCACTGATCCTGGGGCCATGAAACCTGATTTCAAGATCTAGTCCCTT
CTTTAATTTTGCACAACTAATTTAATCAATTCATCTTAAATTTTATCATCATTAATAATAGCAGAGATA
ATTCCCCTTTATGGAGTTGATATGCAATGAAATAGCATATCAATGTATGTATGAATGTCCCCCACATA
GAGTACTACACAATGAAACGTGTCACTCAGCATAACGTTATGTGCTCCTTCTGCAACTGGATTGCACT
CCAGTGGGATTTATGCTGGTGAGATGGCTGTGCTGCTGGACTTTCATGGGACACCAATCTTTGAAAAATA
GCCATGATCTGGCTGGGCTGGTGGCTTATGCTGTAAATCCAGCACTGTGGGAGGCTGAGACGGGCGAT
CACCTGAGTCAAGGATTTGAGACAGCCTGGCCCAACATGGTGAAATCCTATCTTACTAAAAATACAAA
AAATAGTGGGATGGTGGCATGTGCTGTAATCCAGCTACTTGGGAGGCTGAGGAGGAGGAATCAC
TTGAACCCAGGAGATGAAGACTGTAGTGAGCCGAGATTGCGCCACTGCACTCTAGCTGGGGCAACAGAGT
GAGACTGTCTCAAAAAAAGAAAAAAGAAATAGCCTTAAACAAAAAAGAAAAAAGAAAAAAGAAAAA
ACCTGATCTATAGATGAGGCCAGTGGATCTGTGAAGAGTTGAAAGGTCAGGTATCAGTCTTATACCATG

70/139

TCGGATGGGGCAATCGTCATAACTTTTTAAAAAATTATTTATTTATTTGAGACAGTGTCTCACGCTGTC
CCCCAGGCTGGAGTGCAGTGGCATGTTTTCGGCTCACTGCAACCTCCGCTCCTGCGTTCAAGCGATTCT
CATGCCCTCGGCCTCCCTAGTAACCTGGATTACAGGTGTGTGCCACCATCCCTGGCTAATTTTTTGTATTTT
TAGTATAGACAGGGTTTACCATTGTTGGCCAGGCTGGTCTCGAACTCCTGACCTCAGGTGATCCACCTG
CCTCAGCCTCCCAAAGTGTGGGATTACAGGTGTGAGCCACCGTGCCTGCCCAATTGTTACAGCTTTTT
AAGTGGATTATATGCTTGCCTCAGGCATTAGACATAATAAGTTAATCTGTTGATAAGTTTCTTCATTTCT
TAATTTTCAGTTGTGTTTTGATGTGTGTGGTCTGGGTGAGCGGCTCAGTGTCTGCTGTGTGAGAAGGCA
TGATATGGAAGGGATGTGACTGTCTTCTTCATCTTCATAACGGGGCCAGGACTGGGGTGAGGTGTGTGA
GATGAATGAAGCACTGGTTTTGATACAAAATTTAAGAAAAATCAAATTCAGAGGTAATATTTAATACG
ATATTTGTAAAAATCAAATTAGTGCAAAAATTTGTGATGAGCAAAATGTAGATAAAGGCATTGTGTG
TTTTCTTTTTCTGTGATTGTAAACACACCATCACTTAGTGGAGAAACAGCTCTCACTTTCTCTCCCCA
GATACAAACCATTTATGTTTGAATTAACCTTCTAGTTCTCTATACCTGTGAGCATCCCCAGGCCCTTGG
TATGGAGAAAGCAGTTTATTTGTCTTAGTAAGATTATAAAGTGGCAATAAAATGTGAATGAATGAACA
AAATGCACATTTTGTGGACCAACTCGTTGTTTGTAGATCTATTTTGAAACTCATTAGGTATGTGCATGA
GGCAAAATAATTCAAGTGCAGTTGGATATTAAATGAAAAAGTGTGAGTCCCCCTTTCTGCCATATTTCT
TTCTGTGCTTCTTATAGTGGAAACCATTTGACCAGTTCTTATAATTTCTAATGATTGTGTGAGTGGCT
ATTCTTGGTTTATCAACTCAAGCAGAATGTCTTGACATCTTGGTATGAAAGTTAAAGATATGAATCAT
TTGTTCTCTCCCTTCT
GTGAGCATGT
GCATGGCAGGCTTTATGTTTGAAGATTGTTTACACAGCTGCCCAACCATCTCTCTACAGGGAAGGA
TTCTTACTCTGAGACCTTGGTCTTTTCCAGGCAGATCACTTACATTTCTTCTACAGATTATTTCTCATCT
GGAGCCTGGGTCCAAATGGGCTTTGCTGTGAACAGTGACTCTCAGGCTTCTGGTCTCTGCTGTGCTGTGAG
TGTCGTTGAGATGCTCCATCT
AAGCTTTTTTTTAAATATCTTTTTGTTTTGAGACAGAGTCTTGCTCTGTTGCCAGGCTGGAGTACAGT
GGCGCAATCTCCGCTCGCTGCAACCTCTGCTCTCTGGGTTCAGTGATTCTCTCTCTCTCTCTCTCTCTCT
TGGCAGGACTACAGGCATGTGTGACACACCCAGCTAATTTTTGTATTTTAGTAGAGATGGTGTTCAC
CCATATTTGGCAGGCTGGTCTCAAACCTCTGACCTCAGGTGATCTGCCGGGGTCCATTTTACGTGGCAGA
CTTTATTTAGAAAGATAGGTACGAGTTGCTCCACCATCCCCCTGCAGGGAAGAGTCTTACTCT
GAGACCTTGGTCTTTTCCAGGCAGATCACTTACCTTTCTCTACAGATTATTTCTCATCTCTGAGCCCTGGG
TCCAAAGTGTGGGATTACAAGCGTAAGCCACCACATCCGGCTCACAAAGTCTTTGGGTGGTTGATGTC
ATATGCCCTCAGTTGATAGCACTTTTAAAGATTTTCTCTTTTGTATGCTGTTATTTTGAAGGCT
TTTGGATTATTTTAAAGAGTATGCCATGTCATCTTTAACTTTTAAAGCATCTATTGCTTTGTTAC
TTGTACTTTATATGTTATATCTTCCCCAATAAGACAAAGAGTGCAATAATACCTCCCTCTGCTCT
GTGTTTGGGTTTAAATTCAGGAGTCACTGGAATTTAAAGCCTAACTCAGTATAGTTTAAAGCAGCAGT
CCCCAACCTTTTGGCACCAGGAGTGGCTTTGTGGAAGACAGTTTTCATGGACAGTGTGGGGCTG
GAAGGTGATTCAGGATGATTACAGGTACATTACATTAATTTGTGCACTTTATTTCTATTATTATTACATTG
CAATGACATAAGGGAAGTAAATATAAATTTACCTCAAAAGAGATATTTTGTGATCGGAGTTATATTGTAT
TGCAACTAGACGGTCCCATCTGGGGGTGATGGGAGACAGTGACAGATTATCAGGCATTAGATTATCATAA
GGAGTGACAACCTAGATCCCTTGTGTGCACAGTTACAGTAGGATTCTGCTCTCTATGAGAATCTAATG
CTGCCATGATCTGACAGGAGGTGGAGCTCAGGCAGTAATGCGAGCAATGGGAGTGGCTGTAAATACAGA
TGAAGCTTCATTTGCACGTTCACTGCTCCTCTGTTGGGCGGGCCAGTTCCCTAACAGGCTTGGGGAC
CCCTGCTTTAAGAAATATGTTTGTGGATTATAGAGGGAACAACACACTGGGGCTTTTCGGAGGGTG
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GTTGAAATAATCTATACAAACCCCATGACACAAGTTACCTATGTGAGAAACCTGCACGTGTACTC
CAGAGCTTAAATGATGTTTAAATTTCCCTCCAAAGAGATATTTTGTGATCGGAGTTATATTGTAT
ATGAGTATATATTTGTATATATAAATATACTTGTATATGAAAAAATATCTTTTTCTTTTCTTTTATTT
TCCAAACATTAAGTCCGGGCACATTGGTTAGGAATTTCCCAATACTTTTACAAACTGAGGACTTGGGA
TGATAAAGGCACCTTTTAAAGATTACACACTGGCATGGGGAATAATACCTTTATAAAGATGATCTATGT
GTTCTGGAATATCCCGAATGTCATCTCCTAGCTGGATCTTCCGCTCCACAAATTCATAAGATGAGATTCT
TGAATTAGAATGCATGCCCTAATGTATTAAGTCTATGTAGAGAGAGTTATTTAGTCCATGTAAATTAAGT
GGGAATATTTTATTTGATTACTGTTTTATCTGGATCTTGCCCACTTAAGGCCCTCAAAATGAAATTTA
AGGCTGTAAAGCAGACCAACATCAACAGCATATCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCT
AAATTTCAAAAACATGCTTAAATCAAAAACAGATGATCCAGCACAGGTTTAAATAATGTTTGTGAATA
TGGCACATTCGTGTCTCATTAACAGTTTCTCTATGCTGTCTTCTCAATAATCCCCCAAAATTTGTA
GTGTTTACATTATGGCATTATAGTTACCTCTGAACCTAAAAAATTAACCTCAAAAGTATTTAAAAAAT
CATTATATTTAAACCATTTTATGTTTAAATGGTTTGTACAGGGCAATGAAAGGAAATGTAGTAATAAAC
ACAGAATCAGATTGGTCACTAATATTTTCTGCAAGTTGAAATATATGTAGACTGGCTTAGGGTCTAAAT
AGCATTAATCCTGTTACCTTCCATCTATAATCAATTAATGTATATGACATTGTTGTCTCAGATCACT
GGGATCTCATGTAAGTAAGTAAAGGATATTCTGTGCAATTTCCCAATATCTATATTAGTTTAAATAT
ACCTTTATGTTAATGTATGACACTGACACTTAGTAATTTGGATTAACTTCTATCAGAATTTGTTTTTCTC
TCATACCTTTGTATACATGCTTAAAGGTAGGTAGATGTACATTTTCTGTGTTAGCCTATCTGTTTCT
TGTGACACTACATGCTTCTGTCTCTCAATTTGTTTCTTCCGTGTACAAATATGCATCATCTACCAT
CTACATCTACAAACATGTAGGCTTCCATGTTTTCATGTAAATACATTTTCATGAGTCTCAGTAGAGTG
TTAGATGAGTGTAAATAGTAATGTTTAAATGTAATTAACATAAAACATTTATAATGTTTAAATAA
TATAAGTTTATGAACCTAAATAATTTAAACATCTTCTGAAATGTAGTAGAAATATGATTAGCCATAAC
TAGTAGAGTATTTTGTGCTTAAATTTTGTGGTGAATTTCCATTTTGGGAATGAGTGTGTGTGTGTG
TGTGCACTACAGACAGAAAGGAGAGAAACATATCTGCATGTTATGTTAGAAAGAGTAGTGTAGCTACCC
TACCAATTTACATACCTGGCTGAACACAGTATGTAAAAATTAATTTTTTAGTCCATTGCTGGTGTCTCT
TGTTTGTGGGTGACTTATCCACATGGTGTATGCAGGGAACCAATCTCTTCTCTGTGGCTGTGTAAT
CCCTTGTCAACCTTGAAGTCTCTGCATCTAAGTTAGGATGAGGAAAGTGAAGGTGGAGGATATAGCCCT
CTTGACTGCTTGCCTTGACCTGGACCTGGAACATCTCTTTGCTCCCATTCATGGGGAGAACTAGTGACATG
GTGGCCCATAGCTGCAGAGGGGAGGCTGAGAAATGCAGCCTCTGGATAAGAAGCCTACTCCAGTGGTTA

FIGURE 1, page 70 of 93

71/139

CTGTACATTGTGGGAGGGAAGCTTGAATTCTGATGGACAGTGAGAACCAATTCTCCACACAATAACGAAAT
GACGCTCTTCTCAACCTTGGCAATGTAGCATCCTGTGACTTAAGTATGTAAATAATTATCAGTACAGGTCA
GTGAAAAATTAGGTCACCTTCCCTTCCACTTTTAATTCTATAGTTTAATTTGGCTATCTGCTACATATT
ATATATATGGGAATAGATAAGATTATCTATAAACATGTATAAATTTGTTTCTTACACTAAAAAGAAAAAT
GACAAAGAAGAAATTAAGTTAGTTGCCAAATCCACACAATACCACCAGGAGAAAGTCTAGGAACCATACC
TTCTAAATCCAGGTCTACACTTCTTTAGTGCATAAATTTTTCTTAATATAGCTCTGAGGAGACTGGTG
TTTAAGAGGAGAAATGTTAAGCCAAAAGCCCATTTCACTTGGCTCTGTACAGACAGTAAGTTAATTTCCAG
GATGTATAACTCCTGATTTTCTGTGATGACAGAGAAAATACTGACCTGATTTGGGTAACTCTGAGGTTTG
GAGATCTTGAATAGCCTCATGTTCTCTGAACCTCTTACCATACATGAATTACTTCTTAGGAAGAAACATT
TATTCTGTAGAATTTGGTTTCGCATTTTATTTTATTTTCTTAGACACTGGTAGTTGGAAATTCAGGAAG
AATTTGACTACAAAAACATTTATTAAGAGAGTTTCTAATCTCACCTGCTAAGTGCTACAAGGAAAAAA
AAAAATACATTTTGGAGCCCTCAAGGGGCTCCAAATACGGTTGAAGGAAAAATTAGACCAGAATAGTATAT
GATTAGGAACAAAACGATGGCAGAGAAATGAGAGTTTAGAGAAAGGAGAGATAATCCTGAGTTACCTTAG
GAAGAGAAAATTTACAGAGAAAACGGCCCCCAGCTGATTTGGGGAAGATGATTCAGACTTGTCTCAAT
GGCATGAGGAGCAGGGGCCAGATGGGAAAGGACATCGTGGTGGAAATGACAGATGAGCAGAAGCTTAGA
AGTACTTCTGCTTCCAGCTCTGTGATCTGCTCTCCCTTGTCTTCTGCACTGCTAAGTTGAGTGTGATTC
CCCACACAAACCCTGAGCTTCTTCCCTCCAGGCTGCTCCATCAGTCAGACAGGAGTGCCTTCTCAGGG
GATCCTCTTCTCATCTTATCGGGGCACTCATCTCGTCGCAGACATTCCTACTCTGGTTGACTTGCT
CTTCCCTCTTTTAACTGACATGAGCAGGCATCACCTCTTCCAGGAACTTCCCTGACACCAGGCTGAGT
CTCTCTGCTGTGCGGGAAGGCTTCTGTATTACTGCACTGCTCCATTTTGATTAAAGGTTTCTGCTATTTC
CAACTCAACAGTGAGCTCTTTGAGGGCAGAAATTGTGTCTTATTCTATTTTCTTGTATGCCCTAAAAAT
GTATTGTGATAATATATAAGTAACGTACAATTTACCATTTTCCACTCTTGAAGTGATAGCTCAGTGGCG
TTAAGTGCACTTCACTGTTGTGCAACCATTTATCACCATTCTCCAGAACTTCTCATCATCCAGGC
AAACTCTGTATCTCCATTACACAATAGCTCTCCATTTCTTCCCTGAGCTCAGGAAACCTCCCATCTA
CTTCTCTTCTTACGCGTTTAACTACTCATATAGATGGAATCATCCAACATTTTCTTTTGTGCTTGGC
TTATTTCACTTGACATAATGTTTTCAAGGTCTTTTATGTTTCTTATGCGTTTTTATATCTCTCTATCT
TTGATAGCACCAATACATAGAAGACAATGAATGTTTTTGTGAGTGAAGACATAAGACCAGAAAGAAATA
GGATGTCTATTTCTAGGGCACTCAAGACATTTCTTGAGGACAGAGGCACTGTAGCTTGAATTTGGAA
GATGAGGTTGGCAAGGTGGGTGGGAAAGGATGGAAGAGTATACGTTTCTTGAAGCATGTGGATTTGCT
TCCATAAGCAGTGGTGGACAGTGGGCACCTTATCTATTAAGAAATGATTTTTTGTGACTCGTGTA
GAGCACTGTCTTAGTTACCTACCCAGTGGTAGATAAGAGAAGCGGATTAAAAAGAGATCTGAACCTGAG
GAAATGGAGACTACCAAGTTTTTTGTAAATATGTCTGTTATAACATATATTATCTAGTACTTGGCATGCC
TGTGCCAAAGCATGCTTTTTGGTTTGTAGTTAAGCCTACTTAGCTCGCTAATTTTCAGTAATTTTGGCTTGA
TTGCAAAAAGTTGATGGGGAGATGGGGAGTCTCTGACATCTTCCCCCACTCACAGGTTTGAAGAAATA
AAATATGAAGAGCAAAAGGATCTTTTTCTGTGGTAAATGTACTTCTATGACAATAACAGGTTGTGGTT
TTAGTGGTTAATTTATAAATTAGGCCATCTGGTTCTTCTGTAATCTAAAGATTTTATATATATGTAATA
TACAAAGTTGTCTTGGGCACTGCAATCTATAAAGGAGAAAACATCTTGAACCTCTGTGGAGATAATAAA
ACCATATTAGCTGCCAAAGTGTCTGCTGACATACTGTCCAATGAGACACCAACGCTTTGCATTACAGC
CAGCAAGGTGTGGAGCTAGATGTATTGATCTATTTAATAATATTAGCTTCTTCTCTGGGTCGGACTTG
GCCAGAGCAAGTGAACAGGACCTATCTATCTCTCTCAAAAGTCACAGCTTTCTTACCAAAATTGTACA
AGCTCAAGCCCAAAAGAAACAAGTCAAGGAAAGGACAGAGGAGCAGGAGGCACATGCCCTGTGTCCAG
ACCCTGGGACCAGCTCCAGCTCTGGCTCCTTGCAGATCCCGCTCTTCTCAAGTTCTCTGGCTTTGATCCT
AGTTTCTGCCCCACTATTCTCTGACATGTACAGCACTTAGCAATTATAACTTGTCTTATTAAACCAATAT
CTCAACAGAATTTTAAACAACCTGGGAGGAAGCAGAGTGGGTGTTACTGTCTCTATTGCACAGATAATG
AACTGAGGTTTCAAGAGGTTGAGTGTCTTGGCCCAAGGCCACACGCTTCTTAGTGAGAGAAGCCAGGATC
TGCACCAATGTCTTCCATTGGACACACTGCCACTTAATATGGTACTTAGTTTTCTTTCTAGATGAAGCA
GTATGAGGAATTTACCATGGATATCTCTCTCTATTTTTTAAACTGCAAAATAATGATAATGATAATAA
TGAATACTTCTAGAACTCAGTCTCTATGCCAGGCACTATATGCTTTATATGTACTAACTTGCTTAATTTCT
CCTAACACCTTACAAGGTAGTTACTAATATTATCACTATTTTTAAATGGGGAAGTGAAGTACAGAGAT
GGTAAATAAGTTGCCCAAGGTACAGAGGAGCCAGATTAGTGACAAAAGTTGAGAGTACTCAGTTTGA
ATTTTACATGTTCCGTGGATATGGTTTATGCCAAATACCTTCTCTTCTAGACCTCAGTTTCTCTCATGT
ATCAAAACAGTGGACTGCACTATACAACCTCTGAGGTCCCTTCTAGCCTGAAGATTAGAGTCTTTTATGCC
CACATGATATGGAAAAACATTAATGCTGGCTTTAAGACTGGAACCTTGTCAATTTAAAAAATAAGCTCT
ACTAAATTTGCAGTAACTGTCCAAATACGATCTCTGGTCTCTGATTTGTATCTCTCACAGAGCATGATA
CAATGCTAGACACATATATACTCATTAAAAACTTGTGAATTAATTTGTAACATTCCTCCAGATAGAC
CGTAAGGGTGAGCTGATGCCCTAATATGCTCCTCAGCTGCTGACTTAGGACCCGTGGGTGACAAACCTG
TCCTTGTGTTTCCATCTGTGACAGTGGGAGTGTCCAAATGAGTCTCTTATCAAAAGTGAAGTCCAGGA
AACTGGATCAGAGTAAGTAAGGAGTCTTCTTGTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCT
CAAACTACCAGCATGCCTATAAATCTCATTTTAAAAATATCAGGAAATAGATGCTCATTGATAAGAGGG
TAAGAAATGAGCAAGGGAGAGAGTCAAGCTGTACATTTGTGCTTAGGGTATTTTCAATTTGAGAAATATC
ATTGGAAGAGATCAATTTCCAAGGCAGGCTTTTGTCTTGAATTAATAAATAATCTTTATCAATAATAAT
TAAATAATGTCAATTTCCAGATACAAAGGGGAAACCATTAATGCCCTTCTATGCTTCTCATATCTTCA
GTGTTTCTCAAACCCAGCTGTGGGTCTTTTTAGGGAAGATACAAGGAGGTGAGACCATGTGGAGCACA
CACTCAGCAGCCACTGTGAAGTCAATGGGTCCCTTGTACCTTTGGAAGCTGACAATCTGCATGAAAGCA
GCCCCTAGGAACATGGGTAGTGGCCGGGATCCAAACTCTGAATCCATAAAAGGGCTTTTGAATCTCT
GTTCCAGGACAGTGAAGTCTGACATGCTGCTGCTGCTTGTGCTTGTGCTTCTTCTTCTTCTTCTTCT
CCATCCATCTGTCCATCAGTCTATCTGTCCATCCAGTCAATCCATCCATCCATCCATCCATCCATCCAT
ATCCATCCGTCTTCCATCCATCCATCCATCCATCCATCCATCCATCCATCCATCCATCCATCCATCCAT
AAAGAAATTTACACAATTTCTCTAGGGACATGAATAATGGTTAGCAAAAAATATATGGGAAGTCTCTGC
TTCAAGTAAATTTAGACTTAAGATATACATCAGATATTTGAAAAAGATATTTTAAAGTTCAACATTTGAA
ATTCTAACTACATTTGTGCTCTTAATTTCTATTTTCTAGTTAGACTTTTTTGAAGATACAAATCATTGAA
TTATCATTTATTTGTTACTTGATTTTATTTATTTCCACATGAATGTAAGAAATTTTAAAGGAAGGTGGGT

FIGURE 1, page 71 of 93

72/139

GCCCTAAAAATACATTTTATGCCAACTGGATTGAATCACCTTGAATCACAATGAGTACAACAACCTGCTAAT
GAGCTAACACTTAAAGAGTAATGACCAAGCAGACACTGTCTAGCACTTTATACCTTACTGATTTCTT
TACTCTTTCATGATAACCCCTATGAGGAAAGTGCTTTTTTGTAAAGCTCCATTTTCAGCTGAAGAAGCTGAG
GCCTGGAGAAAGTTACATAGCTTTCTCATGGTGTCTCCACTATGAAGTAGCTGAGCTGAGATCTCACCCAA
GGCCCTGCTGGGTTTCAGGCCACACTCTTAAGTACTCACAGCTGCATCACACTGAATATCATCTCCCTGCA
CTGCCATTTTCAATTTGAGCAGGGCTTTGCCTGTCAAGAACATTATATCTTTTGATAAACAGTGCATTTTT
TCCTTGATAGTCTGTATGGGACAGCCTCCTTGTTCATCTGAAGGACAGGGACTTCAGGACCTCCTGCT
GTGGTCACCAAGGAATCACATTCAACTTCTCAGCAAGGTGTTATGGTCCTTCTCAGTTTGCCTACGATC
CATTGAGGCAAGGTTTCTCTCTCAATACACCCCTCTGCTTAGCCAGGGGGACCTCCCACTGTCTCTCT
CTATGTGTTCTATTTGTTCTGACTGTAGTACCCGCTTGTGTGGTTTCCATGATCCTTCTTCTGCTGG
AATGAGGCTCCTCTTGAGTCTGAGAGCTTCATTTCTGTCTGTCTTTTGGGCTGTGCCAAAGCCCTCTG
CCTTCGTGGACTCCCCACTGATTCAATACCAATTTTCTCTCTCTGGGCTCTTCTTAGATTGCAATGG
TGCTCTGAGATTGGGTACCAAGACTTGCAGTGCCTTATTTTGATACCACTAATATGAGACCATGTTATAT
GCCTCTTGAGATATCATTCCTTTCTAGCAATAGACAGTGATAAGCATGCGTATAGAGGGTAAACGTAGG
ACTTTGAGCTTCATCACTCTCAATAGACAAAAGTAAAGTATGCTAATTTCAATCCTTCACACAGTAAAT
TGAATGTAATAGGTCTTCAGTAACATTTTGAAGGAATGAAATGTTTATGATATATTGATTTAACTGAGCA
AATCCATAAGTGCCAGCTTGGAGTAAAGTACAGGGAATCTCATTTTTTGGGTAATTTCAAACAAGTAGG
AGACCATCCACTATCTATTAAGGACAAAGGAGATTTGAGTGACAAACATGTTCCAGACCATCCAATGCTG
TTATTCTACTACTATCCAGCTAGTAAATGGGGCAATAAGAACCAAAAGCAGGTAAGTGTCCCTATG
TAAGTAGACTTCTGATCCTGGCCAAACAAAACAAAACAAAACAAAACAAAACAAAACAAAACAAAACAA
GTGTGAAGAGCATCTTACCGTTTATTGCTTTGGATGATTTGTGCAATCTAGTTAATGGGGGTGGATCTG
ATCAGTCTTTGTAGGAAGTCAGTATTTGGCATATGTCTGGCTTCTGAATTTTCTAAATATATTAATTTTA
TTTTTAAATCCATTCAATCAACACTGAATTTACTAATCAACTACTAAATAAGTAAAGATCCTATAGTAG
ATCCTTCAAGAAAGTGAATTTGAGACATTAGGTCTACTATAAACCCCAACCCCTGTAATCTTTTGTGGCA
ACCTTAGGAACTTGAATGCTTTTTACACTCTGATAAAGGTTAATTGTAATCATAGCCCCAGTGTTCG
AAAATGAGTCAGAAGATACAAAGTATCTCATAGGATAATATATAGCTGTAGGTACTTCAAATGGACAAAG
ATAACACATTATGACTGCTAATATGGATGCATTTGGGAGGAAAATAAGCCCTAAGAAGCAATATGCAGAA
AAGCTTATGATTGCTGGAGACAGATAGATCCAAAGAACCTAGGTAATTTTTCAGCAAACTGTGGTTCCTCT
TCGCTCTTTCTTGACATTGACTGTGTTTTTAACAGGGAAAAGTTATCTGAAATTTTGTAGAGTTCA
AACTTTAAATCGTGTTCATTTGCTAAACCTCCACTGGATGGAGTGGCAGAGAGAAAACACAGAAAT
AAAAGAAAAGCAGTAAATGGGAGAAATGGAAAATCTTTAAAGATGCTACCATCCTGAAAAGATTGAAAAGCAA
GCCAGGAAAGCCAGGGGAGGAAAGAGCGCTTAGAGGTGTCCCAAGCTTTCAGAAAGTATGAGGGA
AACCCAGCTCTTCTTGTACTTCTTGGCATTTTGTTCCTCTATACGTTAGCTTTTGGTTAATCTTTTCAT
GTTACTTATATCTCTGTTTTAAATTTTACATTAACTCATTTGGTTTCATATCCCACTTAACAAATTAGA
TATTTTCTCTGGGCTTATTAAGAAAATTTTGTCTCTCATATGTTATGGCTTTAGATTTTCTGTGTAGCT
AGGATGTTCTTAAATTTTATCTTTTACCTTTGTTATTTTCTCTGAAGCATCCCCATTTGGGGTGGCAGTGG
GGGGTATTAATGGTTATGTAATTTTACATGTAATTTGTGCAATTTACACATAGCCTCAAATATAATGAG
GCCTAGTCTAGCTGCCATACCAAGAGGATATTATAGTTGCCAATAAAATCAGTATTATTTCTTTTTTTT
TTCTGTTCTTTTTTAGCTTCTTGCAAACTTCACCTCAGAACTCTTTTTTGAATATCAGTTTTGTGAAAAGC
ACCGTGCTGGGTTCTTTGGGAAAAGCAAGATGAGGGCAATGCATCCTCCTTCTAGTGAGTCTAGCAC
ACAGTAGACTCAGGAAGTCATGCACTGGAGGAGTATCTTCTAGAAGTGGGAAAGGTTAAGGAAGGG
ATCAGAAACCTTTTTCACTCAACCAATTACATTTTCTGAAAGCATGTTATTAATCGTACATGATCTTGC
AGACCCAGATAGAGACTATATCACTATATCAATGTTTTCTTGAACAACCTGGAGTTAATTTCTCATATGT
TTGGTTACCCCTCAAGTATTTATGTTTAGGATCTGTTTTCTTCTCTTAACTTACATTCCAAGTTTAGG
TATCTTCCCTCCATTTGCTGTCCAAAACAGCATCCTTTTCATGTAGCTACATGCCATTGGAATGATTTG
GTTTTTGGCATGGATTCTAGTCTTAAATTTGGACTTTTATTGGTATCTAAGATGTCATGGACAGAACCC
ACAGATGTTGTACAAAAGGGCTGAGTGGACAGTCCAACAGAGTTACATCATCTGTTCAAAACACCCCTTG
TAATGGTTGTATCAGCGTCAATGTCTGAGTTGCTGTCTGGTTCTCCTGGCCAGTCCCTCAGCTGGCCATG
CCTGTTTACGGCACCAGGAAAGCTTCACTCTCAGGCAAACTTTTCAAGGATTTGAAAGGCAAGAAAC
ATGATTTTGGAGGTTTACCTGTTTATTTTCATGTATAGCTTCATATTAACAGATTTTGTATCACTTAA
AAGTAAATAAATGATTTTGTATTTCTCAAAATCATCTTATATTTTATTAATCTATTTTAAGGCTTGCAAT
TACATTTAATCTTCAAATCTTGATGCATTTTCACAGAGTTTCTTTAGTTAGTTAAGGATATTAATGACTT
CCTTTAATAGTTGATGAAGTGAGTCATCTGACAGTGAGTCACTAAGGCCAAGCTTGTACCTGCTCTT
AAATAGCAGTTGTTTTACTAGATTTGTACTGAAACCTTTTTAAAAATCTGTTTGTCTTATATATAACAAG
CATTTCCAGTAGTTAATAATACTTTCTTAGCTCTTCAATCATTTTTATGAGAGCATTACAAGAAAAGCAGG
AGATGGGGAAGAGATATCTTGTGTCATGTAGGATGCATGAAATCTTACTTAGTCTGTTGTGTTTTG
GATTCGAGAGAAAATATGTAATGAATCAAAATGTTTCTACAGTCTCTGAAAAGATGTAATGAGACAGT
CTTCCAGCAGCCTTTGATCATCTGGGAAGTCATTGACTTTGATCCTTATCCTATCAGGGGCTCTTACCCT
GGGGTCCATAAATACCCAGGCATTTTTAAGAAGTGGATTTCAAGTAACTTGTTCATTTTGTGATTTTT
AAAAATATTTTGTTTTATGCATTTAAACCTTAATCTGAGAAGTCACTGTAGACTATACCAGATTTCCA
AATGGAATAAAAATATTTAAGAACTCTTATGTGTGTGTTTCAACCTATAAATTTTATATGTGTAGCTC
ATGGTTAGGTGGTAAGTAGAGAATTTGCTATCTGTGTAATATTTGGTACTTTTATATGAAAAGGAAAG
TAATACAATGATAGGTACCATTTATTTGTGACCACCCATATTTTCCAGGGAATGTGATAGATACTTTTT
ATATATTCTTTCTAGTTTTTACCATAACATGCTGCAGGGATAGTGTACCATTCTCATTTTGCAGATGAA
GAAATGAAACCCAGAACAAATTCGTTTATTTCATTCAAAAATATCCATAGAGCATACACTAAGAGAAGGC
ACTCTGCTAGGCCACAGAAATGAATAATTGACCCCAAACTCACTAAGTGGCAAGCTGGACC
TAACAAAGCCCATATCCCTTCTATCACACATTCCATCCTCATAATATCATATTCTACATAGAAAACTT
AACAGTCTCTGTTGAGACACTTGGAACTCTAAGAAGGTAGTCAACAGATACCTTTCTCTTTATATAAATAT
GATATCTAATTAGCTTTTCTGGAAGGAGTGTATCTGCCTTTTTTAAATTTCTAGCATTCCCTGAGCAAA
TTAGAGCCAGGTAATGATTTTCTGAGATAAGTCAATCTCTTCTAGGACAATCTCTAGTCTGTCTCATCA
TGAGATGGAATAACAACGGTCTATGTCAATTCAGTGACGGCACCTGCATGTCTTGTATCTAAGAAAAGA
CACCTCCTTCTCTGCTTGTCTAAATATTTGTAACTTTGCTTAAATGGTATATGTCCACTGTTTTGTA

FIGURE 1, page 72 of 93

TGTGGGAGGGGTTTATGGTTTGTGTTTGTGTTTTTGGTCTTTTTTAGTAACCCCAATCCAAACTATTCTCA
TTTGTAACTAAATACTTAGAACAGAGGCTTTGCAATCTTGAAGACCGAATACATTTTTACTACTAAA
TGTAAGGCAGATTATTGAGCCACCCATTTTGTAGTCTTGATTATGGCAACCCGAGGAACTAATACGGTTA
CTCTTTTCTTTTATAGGAATACCTGCTGTAGTCTCTGTATCTTGTATCTTAGGGACCAACATTTGTATG
AGACCTAGTACCAAGCCAGAGGCCATGTTGAAGTAGCAAGATATGGGATAGTTTTTTACTTTTCAAAGTAAT
TAGCATCTAGAGTCTAGAGAGTTTCTCTTACAGGGTGGCCTGGTGTCTTAGTCTATTTTCTGTTTCTTATA
ATAGAATACCTGAGACTGGGTAAATGTACAATAATAAGAAATTTGTTGACTACAAATCCTAGAGGCTGGG
AGGTTCAAAGTACAGACGCCACATCTGGCCATCTTTAATGAGGGCCTCATGCTGTGTCAATACAGCA
GAAATTTGGAAGGAGAAATGGGCACATGCAAGAGAAAGAAAGGGGAGCAAAAGGGGCTCACTTTTGT
AACTATGAGACTAATCCATTCCCTGGAGAACTAATTTATTTCTCATGAGAAAGACATGAATACATCTTAAC
ATCCTAATCACITCTTTAAAGGCTCAACTCTGTACATGCTACATTTGTAACAGGCAATTAATATTCAGCA
TGAGTTTTTGGTGGGGAACCAACTACATCCCACTAGTAGTACCTAGCTACCCACTTTATTTTAGAGTGGCT
ATTTAATGACCTGGCAAGATCTACTGTGCTTGTAAAGAAATCCACCTGGGTAAAGAAAATAGTTTCT
GGCTTCCAGTCTCCTTTTGGCCTCTCTCTAGAATGGCATATACAAGTTCAGTGGTTACTGACTTCAAAGG
TGGGGTGGAGACATGAATGAATTTTTCTCCTTTCTTTGGTTGGTTGCTCTCTCTCTTTGTTGCTGAA
ATTTGTGTAGGATAATGGAATGAATATGGGAGATGGGAACTATAGAAAGACTGGAGGAGAGGGAGAAGT
CTTTTCTGAATTAACCCCCATGTGCTTGTGAGACCTTGGACCCAAAGGGCTCCTGACTGGCTGGCC
CACTCCTTCTGTATATGGAGCCATAGGGCTTTTCTCTGGCTTCCCAAGTTGAAGCATTTGTCTATGTCTT
ATGCTACAGATTTCTGGCAATTTTACCTTGTAAACTCCCGTTTCGACATTTCTGAAGTTAAGTAGAAAAT
GGGAATATTAAGCCTCTTTGTTTTTGTCTTAAATCCATTCCAGAACTATAAGTCCCTGGGTTCTTGGCAAC
AACAGGTGTTCCCTCTAGATTTTTAAATCAAGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGAAT
ATCTCACTAAACGACAGTGTGTCATCAATTTGGCTCTATGGAGGCTTGTAGCTGGGTGGGAGATGGG
AGGAAGCTATCCTTGTCCATGCGGTTTGGAGACTTGTCTAAAAAAGAGACCGTCTACTTCCCTCGTAGT
TTTTGTTTTGAAGACATTTGTAGTGTTTTACGAGGACATACAGTTATCTGGAAATGCAGACTGATGACA
ATAGTATTTGAAATGCTCGTAGATCTGCTTCTAGGTTGATGGAAGAATGTATGTTCCAAGGTGAAAGTG
CTTTGTTGACTTTTCGGATGAGCCAGCTGTGCTGCTTTTGTACAGTTAATCGGAATCACTCCAGTAGTCT
GTCCTTCCCTGTCATTTGACAAGCACTTAAAGGGCAGTCTTAAGTACTTTACTTTCATAGTTTATTAAT
TTTTCCCTTCTTTAGTTTGCATCTACTCTCAGAACTGAAAAATAATTTCTTTTACCTTTTCCCTTT
CTCATTTAAGCTGAAATGATTTCTTCTGAGCGTGTAAAGGAAAAAATAAGGCTGTGGTTTAATA
CAATTTGCCTTTCTGAAACAAAAATAAGACTAGTTTACTCTCAAGCTGTGCTGTATCAGATGAAGAT
TGTTCTGTCACTCCCAGGAGATTTTGATAAGAGAGAGTACAAAATTTTATAATATCTACATAGCATAATT
GTAGCAAAATATAAGAAGTATTATAATGTTTATTTGGGGATGAGGGTGGGGATGGGTTTTTTGTGTGTG
TTTGGAAAATTTGGGAAGCTAGAAGATCTTAAATCCATCAGCTTCTTCAAGAACTCTTCTCAAATGCTT
ATTGTCTAGCAACCACTCTCTCTATAAACCAAGGCTCTAGTGTAAATACAGATGGGGCTGTAACAAAGT
AGGATTGCCATCTGCTTTGTTTTCTCTAAGGGACATTATTTTTTTGTGATCCCCAAGTCTCATCTCTCAA
TCTGAAAGTCTTGACTTATTTTTCTTCTGGAGTCAGATAGAGCTGTGAGATTAACTTTTCTCTGAC
AAACTACTTCTCCTACCTGTGTATCAAACTACTTCTGTTAAATGGAGGGGAAAAAGGGTAATTATGTGTG
TGTTGTGTGTGTGTGTGTGTGTGTAAGAACAAATACATATTTTAATGATTATTTATCTGTCTACTT
TGCAAAGTCTCCTATGAGGTACCTAGTAATTCATAATACAGTCAAGTGTGAGATTCAGAAAAGTAGG
AGTGAGCAATCATTTTCCCATGAACAAGTAAATTTACTGCTTTTGAACATTTTAACACCTGTGCT
TCCTGATGGTGGGGCTGCATGAAGTTTGAAGTAGTGTCTATCTCTTTATTAGGTAACAAATAGGAGC
ATAATTTATTAGGAGAGAAACCTTTTCTGTTACCAATTTGGTGAGAAATTTGCCAAAGAAATGAAT
GCTTACAGGAGGGATACAGCTTAATATCTTCACTCCCTTTGTCAAAGATACAAATGACATTTTCTCA
TATCAACTTCTTACAAAAGTGAAGCCATACATTTTAAAAAGAATATACCCAGTATTTTAAAAGTTTGT
ATATATCGTGATCAGAATTAAGATATAATCCAGCTTTTGAAGAAATATACATATTTAGCCATTAAAGGTA
TGTGGTAAACTAACTGATGAATAAAGTTATGGAATATTTTCAATAATTTATATTTAAAGTAAAGAA
CAATTTCTCTCTTTGTTATATAGTATTTTACATAAGCTACAATCTATAATCTTAAACCTTAATTTCTTG
AAGGCTTTTATAAGCCTCATTTTTCTTTCTAAATAGAGAAGTTCATACACTGCTTTTATGTCTTATATGT
TGATGTGTGAAAAATAATCAAATACAGTGGGTGAGTAGAATGTAACTACAATATGCTACACACACAGACA
CACAGGATGACTAAACTGTGCACATGAGCTGATGTCAGAGCAGGAAAGCTCTAAGAAGATGTTTGA
GTAGAGTCAGATGACGTTTTTGGTTTGAAGCAATAATTTTTTCAAGGAGCATATAAGAGAGTGTGGTT
ACTTGGGTTGGAGTTGAAAACCAAGCAACAGTTGGGCAGACTTGAAACCAGTTTTGTCTTTAGGTTTCTT
TTCTTATGATTTGGTCTACAATGAGTTAGCCACTCATGCTATTTAAGGCTTGGTAAAGGAGAGACTTCT
TTTGCCATGTAGTTTATACCTCATGTATGCATTTACAGTAGAGAGCTCCAGGAATACTGCGAGCCTTCTA
CTGGTTTTTATCTCTATTTAGATAAAAATGAGGAAGAAGTAGAATTATACATAAACCACTCTGTTGGCTT
TTAGTTGAGATATACTACAGAAACATCACCTTTGAATCTGTATATGTAAAAAAGAAATCTCAGAGTAA
GATATAAGTTCTGTGCAATGTTCTGAAGGAATGGGTAAATGTCAGAAATGCTTCAATTACATTACATAAA
GTAATACACAGTGTCTTATCATAGATTGCATATGTCAAAGTTGGCAAGTTTGCATATTTTACATAGATCAT
GACCTTCATCATCTGATCTCTTCAAGAAATGGTCATCTAATATGGGTATTATTTAGGAGTACAC
CATTTATTTTAAAGAGCAGTACCTTTGTTTATGTGAAACTTCTGAGCTAAATCTTCAATTTTTTCTCA
AATGAATCAGTTTTTTTGTGTTTTTCTTACCCTGGTTTTTACTGATAGCGTTTGCCTGAAGAACACC
ACTTTGTTTCCCAAGGCAAGTAGTCACTCAAGGCGAGTTTTTGTCTGTATCCCAAGGCAAAATAGACA
CGAGCAAACTAGTGTGAGGGCTGTGGGTTCTAGTAGAAACCAACTCAATTTCTAATTTGGGGTGTA
TGAAGACAGCTGCATTTCTGGACATGCTAAACATCTTGAATGCTTGGAGTGAATTAACCCCAACAGTG
CTTCTCTTTCTCATTTCTTTGCACATGATTTTAGGCAAAATATAATCCACATGCTGTTGTTCCCTCTCC
TTTTTAAATCATGAAAAATGTTGTTTTTATAGGCTATTTAGGGTCCAGGATGCCTTTTTATCCTTTTTAT
TAGGTTATTTTATATATAATGAAAAAGAAACATAAACAGAAATACAACTGACATCATGAATTAGAT
GCAAGCAAACTGCCCAATTTAAGTTGAAGTTATAAACCTAAAAATTTTAAAAAACAACATTTCTCT
TGGTGTGTTTGCAAAAGTAAATGCTTTCTCTATTTGGGCAGAAATTCAGCGCTGTTGGGATGAAGGAGAGAA
TAGAATTAATATTTATGAGTAGCTACCATGGCTTTCTGGGACATCTGCTAACCCTTAATTTTTACAGT
AACCTTAAGTGGTAGGCCAGTCCATGCTGATTTTACAGACAGGAATGCTTTCAGAGATATTAATTAGAT
GGCTGTAGACCACAGAGAAGATGAAGTCAAGGCTCTTGACTTTTCAAGCTCATGACTTCACTTACTCT

FIGURE 1, page 73 of 93

74/139

CCCTCCTCATTCTGTTGGGAGATGGGTGGGAGTGTGCCCTCCAGATAATCAGAAAGTCCCATGTTGGGAT
GTGATTGGAAATAGCTAGTCCCTCAGGCCCTGTGGACGAAGGCTATTGTAGCCTCAAGAAAGAAAGAGTCA
GCTTGATATTGGCAAGGTGGTTATTAGTGTGGCAGCTGCATAAGAGCATTGGATAGTGGTATGATATG
GGATGGGGGTGAGGCTGCTCACACCTCCTTATTATGGCAGGGCAAAACCAGAATAGTCACAGT
GATGGTGATGTAGGGTAGGTTCAAGAGAAAGCTCATGTTCTCTAGCATTGAGACTCACAATATTTCAAA
ACAAGTGATTATTTATCCATTACTATTTATTTGGTGATGGATGTTGCATTTATTTATTTTCTAACAG
TAGTACATATTTGGTAAGAGTGTGTTGTGACATTTCTTATTAAATGGATTAAACCCATTTTCTTAATTT
TTTTAAGTGTGTTGCTGTATCGAAGATATCTTAAAGTGTACAGAATGGGAATCATAGCTTTAATGAG
TCTGCATATAAGAGAGTCCAAACATTTTTTTTTTGGAGAGAGGAAGGTCAATTTCAACTGTACTATAGGA
ACGATAGGGCCCATGATCCATGGTATGGCAATAAGTTACTATTTTTTGGAGAATAAATCGCAAAATATGG
GACGTGAAGACTGCTTGGTATTTACACAGGAGTCTAGTTCCTCTGATACTATATTTCTATAAGCTTTCT
CCCAGAAATCCAAAGTTTTATTAGCTTGTAGCCATCATTTGTGCCACAATCTTCCTTCCATGATTTATTT
TTTTCCCATACTGTACTCTTGCACTGAGTCTTTGGCATTGAAAGGGAAGAGATGAATTATTTCAACTCTT
CTTCTATTGAGTGAAAAGCCAATACAGAAAAAAATGCAACAGGCAATTTCTGACTGACATTTTGGAG
AACATTGGGGTCTCATATGACTGAGAAAATGATTATCTCTTTTGAAGGTCAGGAACCAATATTTTTTT
TTCCAGTGAATCTACTGAGGGAACCAACCCACTAGCTTTTTGTAAATAGCACTCCTCAGGGAATGTTGC
TTTTTCTTTTGCAGTGTCTGCTTTGAATCTTCATAGACTGTATCCCATGGAAGCAGGAATATAATTA
CTGAGTGTCTACTTTTTTTCATGCTCTACTGAAGAGCCACCCTGATTTATCTTTTACTCCAAGGTAGT
GTGGAATTTACAAGGATTAGATTATATTAGTCATTTTGTGAGAGATCTCTGCACACTTTTCAACATC
ATTTCTAAGAGCCTTGCCCACTCAGTAAAGAGGTTGAGGCTTCAAGAATCTCTGTGTACCAACGCAAA
TTAGGCAATTTGTAAGAAGTCCCTAGTAGAGCAGAGTGGAGAGAGGGCTCAGGATCTCGTGAGGCTGGG
GCAGGGAGGTGGACATGCTATGAGCTCCTTTACAGTCAACACAAAGTTAACACATCTTGAGGAAAAAC
CGTTACTGTATAATGGAAGGCAGAGGCAAGGATGTCTGTGCTTGGTGATGAAGCTATAAGTAGTGAGCT
GATTTTGAAGTGAAGGGTGAATTGTGCCATGAAAGAGACTCCCTCAATTTTATTAGCCAGATTACTGCC
CATATGCGGGGTGAGGAGTGAGCATTTTAAGGCATTTCTCTGTTTCAATATATCATCTCTGGATTCA
CTATTACTGGGACTTGTGAATATAGACTAGGGATTAACCTGAGTTTGTCTTTAAAAAATTTATTTTA
TTAAATGAGATTCTGAGCAACTGATTTCACTTAGCTTATCAAATATTCTTACTACTTTTTCGATATG
CATTTCTGTCCCTCGTGTGAAGGCCACAGGCCATGGCCCCATGTCATTGAGATGGAGGTCTCAAGT
GATGGCGGGATGAATCACCTCTCACTTGCCACCTGCGAGAAATGCTATCACTGATACCTCTCCTTATGTC
CCGTAGCAGCTGCTAAGCTCCACGTTATTATTGGTGACACTTTCTAGTGTTCAGGAGAGAACAGGATTT
ACTTTTTGAATGCCCTCAAATTATATAGCAGGTTCAATTTGGAATTGCATATCAGAACATTTCTCCTGTT
TATCAGGAAAATAAACCAAGGCTTTGAACTTGTATGCTATCCATAGTTGGCCCAATATAATTTTGCATG
TGGTTTTTATACATATTTTCTCATTGGCTATGAAGTGAAGGCATCTCATGGATATTTATTTCCAGCTG
AAAAGGTAGTTAGATGCTGTGTGTAAGTTCGAGACCAAGTATATTGGAAGAAAAGAGACACTCCATCTAA
TAATCTTTTCATAGCTTTTCACATTCATTGAGAAGGTTACTTGATAACCTTTTCTGCACACTCTCTCCCAAC
CCTGAGCCAGGAACCTTGACAGACACTGTGCAACAGATCTAATAACCTTGTCTGCAGGCAATATGCAC
AGCTGGGAAAGATTAATAATAGACTCTTTTGGAGAGTCTCAACATTTCAACGGAAGGATCGAGCAAT
CCGGCTGGCCTCCGACTGAAAATATTACCAACAGACATACTTCAGACAGATTCCATGATCACCATCCTT
ATGTGGCACAAAGTCTTATGGGGAGCTTCTTTGGCTTCCAAAGGCCACTAAAACGTGCAGACCTAAATA
ATACTGGAACCTGTAAGTGGGAATAAAAATTATAATTTCCATTTAATCATGTAACTTCTCATCAGAAAGG
GGCCTTTTGGTTTCCATATTTGATCGGTTACATGGTCAGCTGCAATTTGTAACCTCATGAGACACACCGAT
ATCATCTGCGTGATTTCTTTTGGAGTTTATTTAGGGTGTAGATAATCCGAGGTAGGTTTCATCATGGG
TGCAATATATACATATAGCAAATGTCATGAGAAGAGAGACAAGGCTCCCTTTTGAATGTTAATTTAT
GCAATAAGTTTAAATGTACCGTGTAAAGTTTACATTACTATTATGAGACTTAACCTAAAAAATTTGGGGTGAA
ATCTTAAAGATTAATAATTAAGAAATGAACCAAGAGGGCTTTCTGTTTTAAGTACTGATCACTTAACCC
AAAACAGTTTGGCTTATCCTATGAGATCGTGGGTATTGAGAAAGAGGAACATTTGCTGCTGCATCCGGA
GATGTTTTCTTGAGAGCAAGACTAGTTTCTTTTGAAGGCTACATCTACAGGTAAATCACTGCATGCTG
TAGAGATACCTGTTCCCTCCCTTCCCCACCCCTGGGGATCTGAAACCAATCATTTGCTTTTTCATCTT
TTACTTTATCTTTATAAACAAGCCACCTTTCTCATTTTTCCTGATGCCAGTCTTCTTTACATGAG
TGGAATCCACTCTTTTCAATGGAAGACACTGCTGCTGAGACAGGCTACACTGTCATGAGCCTTGGCATG
GCTGAGTGATGTAGTGGAAGGTGCAATAAATTTAACTTTAAAAATGCAAAATTTGATGGAATCATGCAT
CTTGTGCCATACAGTGAGTATATGGTCTAGCAGGATTTACAGATACATGCATGATTATTTGAATACAGTA
TAGCAAAATGATCTGTGTAATAACACATGAAAAGATGTGCAACCTTATTAGTCATTAGGAAAAATGCACAT
AAAACACCGTCTCTGTGTGATACTCTGTACGCTATTAGAATGTATAAAATTTAAAAAGACTGAACAT
AGCAAGCACTGGTGAGGTTGTAGACCAACTGGTGTCTTCATGTTTTGCTGGTGAGAATGTAACATTACA
ACTACTTTGAAACAGTTTGACAGTTTCTTAAAAAGCTAAAAACATCCACCTGGCATGCTATATACAGATA
TCCTACTCTTACGATTTTAACCAAGAGAAATAAAGCATATATCCATTCAAAAACTTGTAATAAATTGCT
TCCTAGCAGCTTATTTGTAATAGCCAAAAACTAGAAAACACCAAAATGTCCAATGAAAGGATACATCGT
ATTTATTTATAGGACATATCCATGCAATGGAATACCACTTAGGAATAGAAGAATCAACTGTTTCATCATA
CATACAACCAATGGCTAAGTCTTAAAAATAATTATGCTTAGTTAAGAAGTCAGACAAAAAGGTAAGAGA
CTGTTAGGAGCTGAATAGCGGGTTAACAGTGGCAATGAAAAGGAGAAAATATAGCTACCTCAAGATA
GATCTTAGTGAGCTTTGATTTATGAAATGATGGTAAGAGAGAGGGCCATAGACTCTGAGGTCTGTCTTAGC
TTTGGTTTCCCTATGTGGATCATTTATCTATTTGGATATAAGAATTATCTGAAAGATGATACTTAAGCATG
TAAGAAATGATAAGCTACCTGTTTAAATGATGAGCTTTTGTACCTCCAAGAACCCCAAGAAAGAAATCC
TGTAAAGCAGACCATTCATCTGATTTGTTAAAGGAAAACAAAATTCATTTTGTCTTTTTCATCAACACA
AGTATAGCTGGCTTAAATAAAGTGAATATTCATGAGAGAAAAGAAAAGAACACGCACACACATACACTC
AACAGGATTCTAGAGTCATTTCCCATGGATAAGAGGGAAGGAAAGGTTGAGGGCAAGAGAGAGAGGGAAG
GAAACAGACTATGATGGGATATCTTAGGGCAAAAGAAATAGGGGGCTGATTGGAAGGCAGCAAACTTCAT
GGATACCTGATTTATTTAATGTCCCTGTCACTCTGGCGTATCTTAATGTGTGTGGTGTGATTTATTTA
GCTACTTGATCCAAATTTCTAATTAAGTGGAGCTCAGAAAGATATAGTGTCCATTGTGGTCAAGGGCACA
GGTTTTGGCTTCAACAGACAAATAAGCTCTCTGAGCATCTGTCTTCTCATCTGTACAATGGGAATATCAG
TTCTACCTCTTCAGGTTGTTGATTCATAAATAAATTGTGTACAGAAACATTAGGATTGCTTCTTACC

FIGURE 1, page 74 of 93

75/139

CGTAGTAAGGGCTCAACAAACCTTCTCCTCCTTCTCCTCCTTCTCCTTCTTCTTCTCCTCCTCCTC
CTCTTCTTCTCCTTTTGGCTTTTCTCCTTCTCCTTCTCCTTCTCCTTCTCCTACCTCCTTCTCATTATTGT
TATTAGGTAACCCACAATATTATCAGTAATGATTGGAGAAAGCTTAAATCTCCTAGTTACCATTAGAAAA
CAAGAACACATTTTGGTGGTTATTACCCGAAGTAATCATAATGTCACCTTTTTTCCATCTGACTCATT
TCCCAGTGATTTATTATATATGGAGTTTTCTGAGTCTTTCTTTTACATATTACAAAAAAGAGTGTGA
TTTAGGGACGAAGCAAGAAATAAAATTTAGTGACTTTCATTCTGCCTGTGCCCCAATTCTTATTGGGC
ATAAGGCAAGTAATTTAAATTTCTTAGCACCTTAGCATCTTCTACTCAAACAGAAATGAGGAACAGTCAC
AGGTACTATTATAGTGTCTAAGTAGAAGGCACACAGTTTTTACACTGAGTATAACACTTTATAGAAA
GCTAAGTGTGTGCTCAAGTTGGTACATTTCTGTAGATGTGACACTATGGCACTAAGAACTTAATGCCA
CATTGAAATTCATTGAGATAGCTAGACTTTAAAAATAATTACTTGACTTCATTATAAAGTATGTTCTGTAT
TGCATTTACTCCCATCTAGTAGAAAATAGACCTTGTCAGTTCAAATCCCTGTTGCATTAATTTACCAGTA
ATGAGTCTTTTTCATTGAGTCAGCAGGGTTTTTCTTGCTTGTTTTTCAGGCTTGTGGATTGACCCCTC
ATGATCAGGTCCACCTTCTAGAATGTGCTGGCTAGAGATCCTGATGATTGGTCTCGTCTGGCGCTCCAT
GGAGACCCAGGGAAGCTACTGTTTGTCTCTAACTTCTCTGGACAGGTAAGTGACCTGGCTGTAGCCT
AGGAGTAGCATGTTCTTTACGATCATAGTTCATTGAACTATTTTATTCTCTCTCGGTGAAGCTTC
AGAGAACTTTTACCATACCACAATAGCCTATTCTTTCTCTCCATTTTCCCATCCGTAATAAGAGAAAT
TGACCAGAGTTCTGAAGGTCACATTAGGTCGACAAATTCATTTTCATGTTCAAATATGTTACCTTCTTT
AACATACCATTCTGGGGTGGCTTGAATGTGGGTCCCATTTGTTTTTTTTTTCAGTCATTGCTTAGAG
TCATAGAATTTAGATATTACTCAATAGCAGCTGCCACTGATAGAGTCTCCACCTGCACAGCTGTGATG
CTAAACCTTTTACCATATTATCTCATTTAATCATACCCGACTCCTAGGAGGCAGGAATGTCATCATCC
ATGTTTTACAGAAAGGAACTAAATCTCAGAGACATCCTGCTACTTGCAAAAAGAGGAAAGCTCACTAA
ATGGTGGAGCCAGAGTTCAAATTCAGATCTTTCTGGCTCCGGTATGCTCTGTTACCTCCTGTGCTGGGC
ACATGGTCTTCCCATCTCATGTTTCACTGATGCTCTCTTTGGTCTGCTGCCATAGCATTTCTGTTTTCCAG
GTAATCTTCTTCTTTTGGGCTACATAACATTTTGGATGAGAAAGAACCATTTTGTGTTTCTTGCAATC
CTATTTTGGCTCCGTGCCAAGCAGTCTAAGGCTGCCAGGCTGCCACAGTGCATCTCTGCATGCTACTTT
ACTTCAGAGCATTTCACTATCTTTCTACACCTGCCAAGTGCCTGGAGCAGAGTTGCAGCAAAATTTATTT
AAGTACTGGAGAATTTGACAAAGGTGTTGGTTATTGTTTGTGCTATTTGTGTTAACACAGCTTTTGAAAA
CAGTGGGTGATACAGTTTAAAGACATATTTTGTCTGTCTGTGGAATATATTTTGATATCACAGTTTCACAA
AATTATCAAGAATAGCCCACTAGTCTTGTCTTGAAGTGTACTCACAATGTATTCTGTGAGCCTTATAG
AGGATGTCTTTACCGTGTCTTTCTTTCCATTCTTGTCTTCTTCTTCCATTTTTTCTATCTCATTCTC
CTCTCTTTTCTTTTCTTCTCTTTCTTTCTTCTCTCTCTTAAATTTTTTGTCTTATAGCAGTG
TGGTTTTGTAACCAAGTGATATCAAGTTTGCAAATGAAATCTTAGACCACAGTAACATTTCCCTGGCT
ACTGCTGGAGTGTCTACCATGTTTGGGTTTTTGGACATTCATAACTCAATTTGCTCCTTGATTTCATCC
TCATCTGTATCTATCTTTTAAAAATTTAATCAATTTTATAATGTTGACACAATTATGCAGATTC
ATAGGGTACACAGTGATGTTTGTATACATATAATGTGTGGTGATCTTATCTATCTTCTGAGTACACACT
TGCTTGAGGACAGTCATCAATAATGTCATTTTGAATATGTGAAGGTTTTTGCATTAAGTGCACCCAAAA
AATCATATTGTCAGTGAGGTGATATGGCTTAGGATTTTATCAGCTACAGCCTTCTCTTCTTCTGTA
CACTCCAGTGGTGGCTAATTTTCTTCTCTCTCACAGAAGTATGAATGACTAAAAGTTCTCATCTCTAT
TCATTCTACTTTCTAAAATTCAGATCGGAAATTTGAATTACCTCTAGACCAGGATTTGTGAGTCTCTT
TACTATTGACATTTTGGGTGAGTATCTTTTCATTCTTTCTTGGTTGAGGGGTTGATATTGTTGGTGT
GTCTCTGATGATGATGCTTCTTCTGACTCACCTTTTCACTGCTGCTCAATTTCTTAACATGGAGAAACCC
AACTGAAACATAAGCAAGGCTTTTCCCTTCTCTCTCTCTCTCTTCCCGTTGCCATGAAAGATGTGACTTTGCT
TTTTATAAAGGGGAGTTCCCTGACACAGCTCTCTCTCTTCCCGTTGCCATGAAAGATGTGACTTTGCT
CCTTCTTCCCATGATTTGTGAGGCTTCCCGAGTCACAAGGAAGTGTGAGTCCATTAAACCTTTTTCTTTG
TAAATTACCCAGTCTCAGGTAGGCTTTTATTAGCAGCTTGAGAACAGACTAATACAAGGGGCTGTCTGT
GCATTTTAGATGTTTAAACAGCATCCCTGGACTCCACAGCTAGCTGCCAGTAGCAACCTCCACTCTCTC
CAGTTACGATAACTAACAATGCTCCGGACATTTCTACCTATCTTCTGTTGTGTCAGGGGGTGGGGGAGG
TAAATTTGCTCTGTTGAGAAATCACCACCTATGCTTTCCCAACTCAATGTTCTATAAGCTCCTCAGAC
ACACTGTACTCTAACTGCACACTCACTTTATCTTCTGCAACAAGTCTATTTCTTTCTTCTGCTTGT
GTGACATCAACACTCACTAGACACTAAGCTAGAGCTTTAAGTTACCATGGATTCTACCTTCTCCCT
CACCAAATTTACAGTTAACTATCAAGTCATCTATGAAGTCTTCTGAATCCAGACCTCCCTCTATCCC
CATTCTCTGCATGGCACAGGTCCTGTTGTCTCTGCTGCAGATTCCTTGTCTCTGCACCACTGACTCAC
TTTCTTGGTCTGCTACTCTTTCTTTCTAGTCCATCTCCCATCTGCTGCTGGAGAAGGCTTTCTAAGGCA
CAGCTGTGATGATGATGCTTCTGACTCACCTTTTCACTGGCTCTCTCAATTTCTTAACATGGAGAAACCC
ATCTCTACTAAAAATACAAAGTTAGCCGGGCATGGTGGCTCATGCCTGTAATCCAGCTACCCGAGAGGC
TGAGGCAGGAGAATCGCTTGAACATGGGAGGCAGAGCTTGCAGTGAGCCAAATTTGTCCATTGCACCTC
AGCCTGGATGAAATCCGCTCTCAAAAAAGAAAAGAAATACTGTGTAGACTTCTTATCTTAATAATCAT
GAATCATATTACAGTGTCTCAAAACGCAAAATTTCTGAAGAGTCACAGGTGACCCAGTGAGCCCTTGTCC
AGGCTAAAAACACCTGGTGGCTGAATTTCTGAAGTTCACACATTCGAATTTCTTCCATTGCTTCTGAGA
GACCTCCACCATACGGTTCTTATCAGAGTCATATCTACCTATAAGGCTCATTTCAGGTGCGCTCTTT
TTATAAAATCTTCTTCAAACTTTCTCTCTTCTCAGCCTTTATATATACAAAAGGCTTTTCTTTCTTTTCC
TTTTTGAATTTCTTCTTGTAGTTGGTTGGTCTTCTTCTTATTTATTCTCATTCCACCATATTAGTTATGA
TTGGATGTCTTCTTACCTTCCCTACTAGCTCATAACTTCTTGTGGTCAAAAACAGATCTTGTCTGCT
TGTGTGATCTCCAGTTTACGAAGTCTTCCATGATACCAACAAATATTTGTTAATTGCACTGGCCAAGGT
CACCAGGTGGCTTGTGGCCAAATCAGAAGATCTACATCTTCTGATAGTCATGGCAGCTGTATTCCCA
TCCAACTCACTTCCGTGTCATTGCTACTCATCAATTTCCCACTTATTCTTTTAAAAACATTGCATAAATA
CATATCTATGTGTTTTGGAAGATTTTCTTAATCTATAAGCGCATTGGCGGTGTCTATATGTCTGCTT
ATATGCCAAATTTGAAATTTCAAATTTGCCCATTTGGAATTTCAAATGGGGAAGCAAGACTCTTATC

FIGURE 1, page 75 of 93

76/139

TTTCCCATATCAAACCCCTTATGAAGTAAATCCTTAAGGTCTCTTACAGGTTAAAAATAATTAGGTG
ATATGATTTGGCTGTGTTCCACCCAAATTTACCTTTAATTGTAATAATCCCAGGTGTCAAGGGTGGG
GCCAGGTGGAGATAAATTGAATCATGTGGGTGTTTCCCATACTGTTAGTGTGGTAGTGAATAAGTTTC
ATGAGATCTGATGATTTTATAAATGGGAGTCCCCCTGCACAAGCTCTTGCCTGCTGCCATGTAAGATG
TGACTTTGCTCCTCTTGCCTTCCGCCATGATTATGAGGCCCTCTCAGCCATGTGGAAGTCTGAGTCAAT
TAAACCTCTTTCTTTTATATATTACCAGTCTCAAGTATGTCTTTATAGCAGCATGAGAACAACTAAT
ACATTAGGTATATGTTAATGATGAGGAATGTGTATAAATACATATACATTTATATTAAATATTAATATT
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GATGATGGTAATTTTCATCATTTTCTCATATCTCAGGCATTGTGACACTACCTCTGCAAGGTCAACTGTC
TCCATAGGCTGTTTTCAATTGCGTAGAAATAGGGGGGAAAGATAGCTTGAAGTCATCAGGAGCCCTGCAA
CCCATGGATTACCAATTTGCTAACTGAGGCTGGATTTCATCTTCAATTGATGTGAATGATGTCTTGTT
CTCTCAAATCTTTGCAAATCTAGGCATTTATAAGACTATCCTGTAGGTCCCTTACAAGACCATGAGGATG
CTAGAACTTACCTAGTCTTTCTTGTAAATGCTTAAATGTTAGTATTGGCAAATGGGGTTTGGTGATTA
TAAGAGTAAAAAACCTGCTGCCATCCCACATTTGTGAGCAGAGGATACATTTCTATCTTGTGTCCATT
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TCTTCTCTGTATCCTGCAGCAGTGAGTTCCAAACACTTAATGCTGTCTCTCTCTGTGAAAACCAAGA
AATAAAGGTTATTATAAGGTATAAATAAAGAACCCAGTGATTCTCTTGGGGTGTGTGTGTCCATGTGTG
TGATATTTTACAAGAGGAAAGTTAAAGATACTAAGAATGCCTGTGAAAGTAATCAGGAAATGGAGAAAA
CTTGTATTTTCCATTCTGACCTAATCTTTGGTGTGTTTTGGCACTAGAAAAACAAAAATATGCTCTGT
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CAACAAGCAGAATATCCCTCTACTAAGCCTTTGGCCAGAGAGTTGTTGCTTAGTCTTTCCATCAGTC
CTGCATCAGGAGGCTCTGCCCTGCAGGAAATAGTATTGGACAACAGAAAGTTCTTTACTTGTAGGCATAA
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CAAAAAATCAATGCTTCCAGTAACATATTTATTAGCTATCTTTTCCCATGTAAAACTTCAGGTAAATTC
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AAAATGGGTGGTACACTCAAAGGAGACCGCACACATTGTAGTAGCTGGGGTGTGGGGTGAAGGAGC
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GACTTATTATCCATTTATCCTGCCTAGAAGCATACTGTAATATATAAATCTAAAGCAAGATCATTTCC
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CAGGAGCGCAGTGTGTGATCTCGGCTCACTTCAATTTCCGCCCTCTGGGTCAAGCAATTTCTGTGCTC
CAGCCTACAGAGTAGTTGGGATTACACGCATGCCCATCATGCCTGGCTAATTTTGCATTTTATGATAGA
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TCCCAAAATGCTGGGATTACAGGTGTGAGCCACCACCTGGCCCATCAGTTCTTAATTTGATGAATGGA
TAGAGGTTTGGCTTCAAATAAATGGAGTTAGTCTGTCAATATCTGTTCTTTTAAATTTGCAATTTGTT
TTATTTTGTAGTGTATGCTATGTGCCCTTAATGATCTAGAATTAAGTTCTAATCTCTACCTGGTATAAT

77/139

TGATTTCTCCCTGTGGACTCCTAATATAAGAAGAAAGATGAAGTTTTCTTTAATGCTTTTAGAGATCT
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CTTTAAACCTCTTTCTTTATAAATTGCCAGTCTCATGTATGTCTTTATCAGCAGCATGAAAACGGACT
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CAACAAGTTCATATATTAGACATTAGGTCATTATGTCTGTCTATTTGAATTTATAACAATTTCCACT
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CATTAAAGTCTTCATATCTAAGACCAAGGGGTGCCCTTTTCAATTTGTAAATATCTTGTGTCTTCAGAA
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TGATCTATAAATATACATATGTATGTATCTATAAATATACATGTATGTGTACATATACATATATACA
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CTTTTAAATCCTTCTCTGCTATCAGTTAATGTTTTAGTTCAATTTCTAGCTTTTGTAGTTGATATA
TAATTTATTTCTTCTTATAGGTAAGTACTGCTCAGAAATTTCTCAAGCATCCGTTTTCTCGCTGG
GCCCCATAGATTCTAATATATCTTACTTTTCAATTATCATTATTTCTCAAAATTCAGCAATTTCTATGTTT

FIGURE 1, page 77 of 93

78/139

ATTTTGTCTCTCATTCAAGAGTTGTTTAAATAGACAATTTAATTTCCAGGTTGGATGGGCATTTTGTGTTT
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CTTCATGTCTAAAAACACCAAAAGCAATGGCAACAAAAGCCAAAATTGACAAATGGGATCTAATTTAACTA
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CTTTGCAATCTACTCATTTGACAAAGGGCTAATATCCAGAATCTACATGAACCTCAAACCAAAATTTACAAG
AAAAAACCAACCAACCATCAACAAATGGGGGAAGGATATGAACAGACACTTCAAAAGAGACATTT
ATGCAGCCAACAGACACATGAAAAAATGCTCATCATCTACTGGTCATCAGAGAAATGCAAAATCAAAACCC
AATGAGATACCATCTCACACAGTTAGAATGGTGATTATTACAGAAGTACGGGAAAAACAGGTGCTGGAGA
GGATGTGGAGAAATAGGAAGACTTTTACACTGTTGGTGGGACTGTAACATAGTTCAACCAATTTGGGAAT
CAGTGTGGCGATTCTTCAGGGATCTAAACTAGAAATACCATTGTACCAGGCATCCCATTAATCTGGGAT
ATACCCAAAGGATTATAAATCATGCTGCTATAAAGACACATGCACCGTATGTTTATTGCAAGCATATT
ACAATAGCAAAAGACTTGAACCAACCCAAATGTCCAACAATGATCTGGATTAAAGAAATGTGGCACATAT
ATACCATGGAATACTATGTCAGCCATAAAAAAGGATGAGTTTCACTGCTTTGTAAGGACATGGATGAAACT
GGAACCACTACTTCTGAGCAGAACTATGCAAGGACAAAAACCAACACCATGTTCTCACTATAGGT
GGGAGTTGAACAATGAGAACACGTGGACACAGGAAGGGGAACATCACACACCGGGGCCCTTTTGTGTGGTT
GGGGAGGGGGGAGGGATGCATTAGGAGATACACCTAATGTAAATGACGAGTTAATGGGTGCAGCACACCA
ACATGGGCACATGTATGCATATGTAACAAATACCTGCCATTGTGCACATGATCCCTAAAACTTAAAGTACAA
TAAAAATAAATAAATAAATAAATAAATAAATACCTAGTTTGGCTGCATGCTTTTGAATTTCTCTTTAGG
GCCTGTTTCATACATACAAAGGATACCATTTACCTGTCTTCTATATGACTTTCTCTTAAATCCTTTTATT
TTTTGTTTTAATTTTTATCTTTCATCCTTTTATTTCTGTACGTGTGCTGCCATAGAGTTTGTCTGTCTGT
GTGTCCTTATAATTAAGTCTATGTTCTGAATGTTTTCTCTTTTGAAGAAATTCAGTTCTAAAGTGTTTAA
TTTTCTGATATTTTTTTCTGTGCTTCCCTACCATATCATTTCTGAGTTTCTGTTTCTGAAATGTGCAACT
AACTCTTTCAAAGCATTGACCAGATTCTTCAGTCTTTTTAATTCATTCTGAAATAACTGGGCTACAGTTT
CATCTGCTTTGTGGACAGAAGTGCCACAAGAGCCGAATTGTGAGTGACAGCCACATGAATCATAGATC
TTAACGAAGTTTTTACTAACGACTAGCAAAAGGATACAAGCTAAAAATGGGTACAAGCAACACAGCATCA
TTTCACTAGTGTAAAGACTCTGAACATTCACATGGAACCTCAAAGGATTTCTTCTTTGTGCTGAATGTG
TTTTGATTTTTGGAGTGATAGATGTTTGCTAACTACGCACGTGACAAAAATTTGCTTAGAGGAAGCCATG
TTAGTTTGTAGTCTACTCAACTTTGTATTTTGTAGTCATGAGATAGAAAGCCTGTGAGATTACGTGCCCT
TCTTTTAGCAGCTGCATCCCATACAAATACAAATTTCCAGTTTGTGTTAAACCATGAACATATTTAGTCAG
ACTTAATATATCTTATTTAAACACTCTTAGATAAGAACTCTCTTGTATTTTGTCAATATATACAATCC
ACCAATGTCTACAAGAAGGGCTAGTTAATCAATATACCAAGATCAAATCTATTTATATGAACCAACAA
TACAAAAATTAATATACATATATAATTTTATATAATTAATTTATATATATATACATTTTATAGCAGCA
ATCAAAACTATCATGATTTTTTGGGATGAATTTTAATAAGAAATAGCAGGAGCTCTGTAGAAAACAGTATG
AACTCTATTGGAAGCAGTAATATCATAAAAACTTAAAGAAATGAAGCTATACATGTTTATGGTTAGGAA
GATTCAATTATTGAAAAATACATCAATTTCTGATAAATTTGGTCTATAAATTCAGTGCCTGTCCAATCAATAT
ATTTAGCTCATTTAAAGATGTATGGAAGAAAGGCTAAGTACCAAGATCAATAGCTCTTCGAGATGA
AAATTAAGAGTTGAGATGGGGTAAAAAACTAATTCAGTCTTAAAGTCAATAAAGCTATAAATTAAT
ACAGTATGGCATGGCATGAGAAATAGCAACTTGACTTAATAATAGAAATACAGTTTCAAGAAACCAACC
TCTACATTTATGAAAACTGACCTATATCAGAACGAGCATTGAGACTACAGGAGAACAGAGGAACCTAGTA
AGTTAATGGTCTGACACAAATGTATCTACATAGAAAAAAACCTTAATCCTTCTTTACTCTATGTAAA
AACCAATATTCAGATGAATGTAGGACTTAATGGAGACCCAAACTAAAACTTTTATAGGAAAACAGAGA
AAAAATCAATTTCTCAGGCTGGGAATTAGGCTTCAACATGGCACCAAAAGTACTAACCATAAAAGATAA

FIGURE 1, page 79 of 93

80/139

ATTAATAAAGTCAACCTTTTTTAAATCAACAACCTTTAATTAATAAACAGGGCCAGGCGCGGTGGCTCAC
CCCTGTAATCCCAGGAGGCCGATCACGAGGTCAGGAGATCGAGACCAGCCTGGCCAACATGGCAAAACCC
CGTCTCTACTAAAAATATAAAAAATTAGCTGGGCGTGGTGGCGGGTGCCTGTAGTCCCAGCTACTTGGGAG
GCTGAGGCAGGAGAATGGTGTGAACCTGGGAGGCGGAGCTTGCAGTGAGCTGAAATCGTGCCACTGCACT
CCAGCCTGGGCAACAGTGTGAGACTCCATCTCAAAAAACAAAAACAAAAACAAAAACAAAAACAA
AAACACAGGTTGCTGGAAAAATGGTTACTTATTTTTATTATGCTTTATAAAATATACAGTTATATTATCA
AACTTCTTTTGTGAAGAAATCAAAATATTATGCTGAGAATATGGCAAGAAAAAGAAAAACACCTCCACCCT
CATAATGGCATTCCCTTTACCCACCATCAACTAAGTCAGGAACCTGCGTCACCTTCAAGTTTTCTGAAAT
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TGAAATGTTTTAGCGAGAGTCATGGGCCCAACCTTGAAATAGAGGTTGGTGGAGTTTTCTATAGTATGT
AATTACAACACAATAAGACTCAAAAGCATTTCATAAAGTGTGGGTGGAAGACAAGATACTGCTTCAAGG
GCTTCATTAGCTTTTCTGCAGACTGGAGCTCTCCAAGGCATGGGGAGGAACCTGTTTACCTTTGGTTCAG
AATCAGTTTTAACCATCATTGAGGGCTAGGTGAGTGCAGCATTAGTCCCTGGGAATACACTGGGTGG
GGAAAGAAAAGAGAGCAATGTTTTCTAAAAGCCCAGAAATGGGCTTACTGTGTTTACCAGTTGTTTCCA
GGATATGTAATGAGGCTGCAAGATTAAGTATAGCAATAGCATCGGCTTAGTTAGTGTGTTCTGTTGGACTA
TTTTCTAAAGAAGCTTCTGGTAAATAGAGCAATAGCATCGGCTTAGTTAGTGTGTTCTGTTGGACTA
AGGATATCAGTTCTATCCGTATGGGCGGCCCTAAAGCCTGGGAAATATTTAATGAAGGGAGAGAGGGGGA
GAGAGTGAGCATGCAAAAGAGAGAGAGAAAAACAAATAACAAAAACAAACCAAGACATTTCCCTTTATA
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AATCACGTGAATGATGTTGCGCTTTGCTGTTAATGAAGCTCGGTGCATTTTTCATTTTCAGTTTCTACTAA
GCATTTATGAGCTATTACCTTCCCTTCCCTTAAACTGCGTTGTTTTTAAAGGCCTTAGAGGCATTCTCT
TCTAGAAAATAAAGGTAAGTGTAAAGTGGTGATAATTTGGTAATAGGTGTCATGCTTGTGGTTCATAATG
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GCACATCTTTCTGCTGGAATAATGAGGTTTATAGTGGTAAAGTTAGTTGCTTATGATCACAAGGCTAGA
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ATCTGCAAGCTGAGGGGCAAGGAAGCCAATCTGAGTCCCAAAACCTCAAAAATAGGGAAGCTGACAGTGC
AGCCTTCAGTCTGTGGCCAAAGGCCCAAGAGCCCTGGCAACCACTAGTGTAGGTCCAAGAGTCCAAAA
GCTAAAGGATTGGAGTCCAATGTTTGGGGCAGGAAGCATCCGTCTAGAGAAAAGATGGAAGCCAGAAAG
ACAGCCAGTCTGAGACTTCCACGTTCTCTGCTGCTTTTATCCTAGCCACGCTGGCATGATGATGACAT
GGTGCCCGCCAGATTGAGGATGGGTCTCCATCTTCCAGTTCACTGACACAAATGTTAATCTTCTTTGGT
AATACCCTCAGACACACCCAAGGACAGCACTTTGTCATCTTCAATACAATCAAGTTGGCACTCAGTAA
TAACCATCACAAGTCCACACCTTGTCAACTTGATCCACATACATCTCCTTAAATCATACATAATCTCCA
AATACAGACAATAATGTCATAATTACCCGAACATAATACAACATATCGTTCAACAACCAGAAATGCACC
AATTCCCAACCAATGTTTATACATAAAGTTAACAACACTTAAATGCTGATATGAAGTCAATAAATACT
TTTTTTTTTTAAAGATGGAGTCTTGCTTTGTTGCCAGGCTGGAATGCAGTGGTGGCATATTGGCTCAC
TGCAACCTCCGCTCTGGGTTCAAGCAATCTCTGCTCAGCCTCCCGAGTAGCTGGGATTACAGGCAC
CCACCGCCACACCTGGATAATTTTTGTATTTTAGTAAAGACGGGGTTTTGCCATCTTGGCCAGGCTGGT
CTTCAAGTCTGAGCTCGTATCCACCCACCTCGGCCCTCCCAAGTGGTGGATCCCAAGTGAATCCACCC
ACCTTGACCTCCAGGTTGTAAGCCACTAAATCTTATGTCACATGATACAGGAAAAAGAAAGGAAGTAAA
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TCATGACAATACAGTAACCTGGTTGCTGCAACTCATCAGTGGTGGTGGTGGTGGTGGTGGTGGTGGT
CTTCAACACCACTTCTGTTTCCCTTTGCTCTAGCAAGTACCTCAGCAGGTGATGGTTCTTTACCTGG
TGGAGTGTCCCAACCTTCATTCTGAAGGGTCTGGGCCATTTGTAGTCTGCTGGATCGAGTTGTTGT
CATTTTTTATTGACCTTAATCAGAGGCATGGTAATACTAAGAGACACCCTAAGGAATTTCTGTATTCC
ACACATATCTTCTTACCTTCATTATGGAGTAGCAGACTGAGTTCATCTTGATAGGCTAAGTCAGTCAC
CCAGCCACACTACCTTCTTCTAGCTTGTGACTTAGAGGTAGGAGGAGCCCGAGATTGCAATCTTA
ATTTCCAGTTTAAATGAAATCATTATTGTGTCTCTGGCGGCAACATTTCATCGCCCTGGAACCTGAGACTTC
TAGGCCAGCAGAAACGTAATGCTGTGGAACAAGAAGCAAAATTTTACTAGCGGGTCTTAGGGGTGATGG
TGAGTGGTGCCACTTCCATTTCCACCCCTTGATTCTGGACCCATGAATCTGGCTATGGGAGAAACAGT
ACCAAAATCTGGACATGATCCGGAGCTACACAGCCTTCTCGAAAACCTTTGCCAGCCCTGCAAGTA
TTGTGCGCTAGTTGGCATTGTAATGTGACTTCAAAGGCCATTCCACCGTCTATCAATCCGGCTGCTT
CAGGATGATGGGGAACAGGGTAAGACCAGTGAATCCATAAGCATGAGCCCACTGCTGCATCTTTTAGC
CATAAAGTGAGTGCCTTGTTCAGAGGCAATGCTGTGTGGAATGCCATGACAGTGGGTAAAGCATTCATA
AGTCCATGGATGGTAGTCTTGGCGGAAGCATGCTGTCAGGATAGGCAACCCATATCTAGAGTAAGTGC
CCATTCCAGTGAAGACAAACCACTGTTCTTCTGTGATGGAAGAGGTTCAGTATAATCAACCTGCCACCA
AGTAGCTGGCTGATCACCCGAGGAATGGTGCCATATCGCGGCCTCAGTGTGTTGTCTGCTGCTGGCAA
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CGTAACCTCCATCCCTGCCACCACAGCCACTTTGTTTCATGGGCCTATTGGGCGATGACAATGGTGGCTGG
GGAAGAGGCTGAGCTGGTATCCACAGAACGAGTCATCCAATCCACTTGATTATTAATAATCCTCTGCT
GAGGTCACTTTTTGGTGAGCACTCAGATGAGATACAAATATCTTCACAGTTTTTGACCACTCAGAGAGGT
CCATCCATCCACATACCTCTTCCCAAAATTCATTGTCTCAGTGTTCATCATGCTTTTCAAGTCC
CTGACCATCCAGCCAAACCATTTGGCTACCTCCCATGAATCAGTATATAGTCACACATCTTGCCATTTCTC
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CTGCCCTTCAGGGATGTCTAGAAAGGGGCTGTAGTGTGTCAGCTGTCACCTTTTGGGTGGTACTGTCAT
CATGTCAGAGCCATCTGTAAACAGGCCCTTGTCTTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCT
ATGAGGCCATCAGTGCAGGCTGGGGGAGAGAAGGCAGGGTGGCAGGAGTGGGGACCATGGGCATTTGAGC
TACTTCTCATGTAAGTACTTGTCCCTCAGGACTTGTGAGCCTGATCATGTATATACCACTTCCAT
TTGATGATGGAATGCTGCTGTGCACAACCCACTTTATGGCTAGATGGGTCAAAAAGCATCTAGTTCTATGA
TAGGCAATTTAGGTAGCTTGGTGATTGATGACCTGTAGTCAACATACAGTTTCTACCAAGCACAGTA

FIGURE 1, page 80 of 93

81/139

ACAGGCCAAGAGTTGTCTCTCACAAGGAGAGTAGTTATCTGCAGGAGATGCAGGGCCTTGCTCCAAATTC
CTAGAGGCCCTCCCTGTGATTGACCTATAGGGGCCCTGCCAAAGGCTCCAAACAACATCCCTATCTGCCAT
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TGGGCTGGAGTAACACACCTAAATGAGGAATGTGTTGCCTCCAAAATCCAAATAGGCCGCTAGGCATTG
TGCCCTTTCTTAGTTGTAGGAGGGGCCAAAGGCAGCAACTTATCCTTCATCTTAGAAGGAATATCTTGA
CAGACCCACACACCCTGGACCCCTAGAAGTTTACTGAGGTAGAAGTTCCTAAATTTTAGTCAATTTTA
TTTCCCAACCTCTGGCACAACAATGTCTCACCATAAATCCAGTATGTTTGTACTTCTTGCTCATTGGA
TCCAATCAGCATAATGTCAATATAATGGACCAGTGTGATATCTTGTGGAAGAGAAAACTATCAAGA
TCTCTCCACAAGATTATGACACAAGCTGGAGAATCGATATACCCTGAGGTAGGACAGTAAAGGTATA
TTGCTGGCCTTGCCAGCTGAAGGCAAAATGCTTCTGCTGGGCCCTTATGGACAGGAATGGAGAAAAAGCCA
TTTGCCAAATCAATGGTTGCATACCAGGTACCAGGAGATGTGTTAATTTGCTCAAGTAATGAACCCATAT
CTGGTCCAGCAGCTGCAATGGAGTCACCGCTTAGTTAAGCTTACAATAATCCACTGTCATTTTACAAGA
TCCATCTGTCTTCTGCACAGGCCAAACAGGAAAGTTGAACGGGGATGTGGTGGGAATCACCACCCCTGCA
TCTTTGAAGTCTTGATGGTGGCACTAACTTCTCCAGGGAGGCAATGTTGTGTTTGAATTTACTATTTTT
CTAGGTAGAGCAGCTGTAAATGGCTTCCATTTGGCCTTTCCACCATAATAGCCCTCACCTACCAGTCA
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CCCTGGTAAAAGGCCAGAGGTCTCTGGGGGAAGGATGGGAGAAAGAGTCACTGCATAAATGTGACGAA
TGTAAGTGGGGTCCCTCCTCAAGGGGACCCAGCCTCCCTTCATTCAAGGGGTCTGGGTCTATAAAGTGG
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TTTTAGGAACACTGAGATTAAGTAGCCAATGCCAGAGCTCTACACAAGTCAGACTATTTCTGATTGTTGCC
TTGCTTCCGCTGACCTTTACGGTAATGACCCACCTTGCTTGTGCTTGTGAGTGCACCACTTCGCCCA
TGCCACCTCAGGATCCAATATTACCATTTGATTTAAATTTTGTAGTTGAATGACTGTGGTCCCACCTAT
AATATCTAGCATGCAGAGAAGAGCAATCACAGAGCTCTCAAGGATGCAGCTGCTGCCCTCACAATCTA
TTTCACAATGTGTGGTCAAAGGTATATCTTCTGTACTCTCCAGCTGGGATGAGTAGGACTAAAGTGAC
GAATCACTCCACCATCCCAATCTCCATAAGCCTTTGGATCCCTTCTCTACATTAAACCAAGGGAGATC
AGGCATTTCCAGCTCACTCACAGTGGGCCACCTTTTGATCTATATTTCAAGTAAACCAAGCAATAAATA
TTAGAACCTTTTAACTCTCCAAGCTGCAACATTAAATGCAGAATTCCTGCTTAGTGGGCCCAAATCAA
TCAATAGCCTCTTCACTTATGTTTCTTCTTACCATTAGCCACACCCCTTAATATCCATTCCGTTGC
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GCAACAGGGGTATTGAGGGTGGGTCTTAGGAGAATCAACATCGTCTTCTTGGCAACTGCCTCAAGGG
AGGTGCTGCTGTGGGTGATGTTAGGCAGTGCAGGGTTAACTCCTCAGACAAAGGTGAAAGCCTGATGGCAG
CGCAGGTGGAGGAGGGGATGTTGCCCTCCCTCTGTTGCCGTGTTTCTCTGGTAAAAAGATTATCAGAA
TTTGAAGCTCAGTGCCCCAGCCTTATCAGGGTCTCCCGCATGGCCCCATTCCAAGTTGCAGGGTACC
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CATTATATCTCTTGGTTCTCCACATATGGTCAAAGGTATTAGGTATAAAGTCACTAACTCCTTGCTCT
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CTATCAGTGTCTCCACACTATTAGAAGTAGAGTCCCTAGCATTTTGGCGTCTAATCATATTTAGCAGCC
AACTCCAGAAACCCCAAAACCATCTAAAGAAATCCATCCTTAAATTTCTGTTCTCTAGAACCCTCTG
GTACCAAAATCTGTATTAGTCAGGATTTCTCTAGAGGGACAGGACTCACAGGTGAGATGTATATATAAAG
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CAATGTTTCAGGGCCAGGAAGCATCCAGCAGAGGAGAAAGATGGAAGCCGGAAGACTTAGCCAGTCTAGTC
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GAGGATGGGTCTCATCTTCCAGTCCACTGACTCAATGTTAATCTCCTTTGACAACACCCCTCACAGACT
CACTCAGGAACAATACTTTGCATCCTTCAATTCATCACATTGACACTCAGTATTAACCATCACCTTAGG
CTTTAGGGATATAGGGAAAAACATGACTCATTGCTGTTATCTGAGAGTACATAATCTATTGGAAGAAAGG
AAAAAGTTACATGTAAGGCTTATATCAGTATAAATTAGATAACTGCCAAGTGAGAGAGGTAGAGGTAGC
AAGTCTGTCTGTGGGTGATGTTAACTCAGTCTTAATCTTGGAAAGAAAGTGGCAGTGTGGAATGGTACAT
GGAGAAGCAGAAGGGACAATTAAGTGTAGCAGATGAATGGCTCACTACAGGGGCATGGGAAGAAGATGCA
AGAGCAGTGGAAATCTTTAATTGACGAACCTGGTACCAAGCTGCCAAGTCTTAGTCTCAGGACTGGCACC
TGCACTTGGCCATTGAAAAGACTTTGGAACCTGTGGAGTGAAGAGTTGTAGGAATTTTCAAAGCCTCAGT
GTAGGAACAATGTGAGAAATCAACAGGGCATGGTACTCCACTGTGTTTCAGATCCACTGGTGTGAGGG
AGTCCCAGAGAGGCTCTTAGAGGGTGGAGAGGATGGGATCAGGCATAGCAGAGACTAGGGACACGAGG
CTCTGCGGCCAGACTGCAGGTCTGTACCACTACAGTGTGATTTTGCCTAGTCACATAATCTCTGTGGG
CCTCAGTTTTTTGTTTTTTGTTTTTCTATTACACAGTACCTTTCTCGTGGAGTTGTAGTGATTAGAT
ATCTAGTACCAAGACTATGCTTGTAGCACTGAGTAAAGTCAATGAAGTTAGCTTTTCAATGGTACTA
TATTACTATTGTTAGTGTGGTGGAGCTGAATCGCCTAACCTATGAGGTGGTGTGTAATGAAGAA
AAGAATAACAGTGTTTTAAAGAGTTTGGTCACTAGAAGTGGAGCTTAGTAATTAAGAAAAAGAGTGAAC
ACTTTTACCTTCTGTGGAGTTAGTAAGTCTACAAAATGTTAATCTGCAATTTGAATGATCATTTGGGA
GACTCTTATTGCTCTATTGCACTGAAAAGTCACTGAATCATTATTTAGAAGTGAATAACGCCTGAG
ATCTAGGCGCAGCACTTTGCAAGTTGTGCTTATGGGACTTTTCATGGAAGTGGCTGAGGAGTTGCCCTGA
AGGAAGGCAGAGGAGTGGGTCTTGGGACACCTTCCAGTTATAAAACAGGACGTTGATTCTGTTTTGTA

82/139

GTTCAGCATCACATATAATTCATTATTATTAAGAGGATCCCACTTCTAAAAATAAGTTGAAAACCAAGTGA
TTTAATCCAGCCTCTCTGTTTGCATATGAGGAAATGGAATTCGGAAAGGTTAGGTGATTTGTCCAAGGT
TGCAGACTAGACTATTTATTAAATAGAGTAGGGTCAGGAACAAAAGCCTGCTCCTTGCTGGTCCAGCGCT
GTTACTAGTTACATAATGAATGCTACCTATTGCTGCACAGTGCCAAATCATTGCACCTTTTCAGATTTTAC
TCTAATCAAAGAAAAAAATTAAGTGCACCTTCCAAATCAGTACTTATATGCAAGAGCTTCAAGAAACAA
ACTAGTATTTAACTTGGTGGTTACATATTGACTGTATTTTCATTGAGTGAGGTTAGAAGAGATTGAGAAG
CGTGAAATGAAGTTACAAAGTAGAACTATATGGTGAACCAAGGCAAGATTTGTCATAGTAAAAGAAG
ACAAAATAAGAATGAAAGAGACAAAAGAATTGCCAATGAGTTGTAATCTTAAAAGAAAGATATATTTAAT
AAAATAGGATTGATTGTTTTGAATGTGGGCTGAGAAAGTCCGCCATCTTCCATTGACTCTGCTCACAGGC
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TTGCATTGTTTGGCATTGTTGGTCTTCTTACTGGATTCAAACACTAGAACACTTTTCTAGCCTTGG
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AACTAAATTTGCCCTTACTTGTACTCCCTGTTTTATTTCTAGTAGAACATACTACAGTTGGAGATCA
TCTCATCCATGCTTTTATTCTTGTCTCTTATTGCTCTGCTTGACTGTAAGCTCATGGAAAGTAAGGG
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AATTCCTGTGAGAAGTCAACATGAAAATTCCTAGGTCATTAGTTAGTTAGTTATGGAACCTCAACACTGTAT
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ATTTGCTTTTACTTCAAGCATTTCAATGGCCATGATGGAGCCTAAATATTGTATGTTGCATTTTGGTTTG
TTTTGTGTGCAAGAGCTTTGACAGTGGAATGAACGGGTTAAGAAATGTGAGTTTTCTTTTCGCTCTGC
TATAGAGACTTAAGGAATTTGCCCCGTGTGAGTTCTTGAGGGCAGAGAAAATACAAATCCATGAATACC
TGAAAGCCTGATTTGGCCCTAAGCAATCTATGCATGTAAACATTTGCATTTGTACCCTGTACATTTA
TAAACATTTTAAAGAAAGTATAAGAGAAACAAATTTTGGTTACTCTCTCTGAAACTGCTCTGATGT
CGCTTGGCCGGGGGAATTAAGACCTCTTCTGTGGCTGTGGCCACTATGTGCTCCCGGCTCTCCAGGCT
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TCAAGCATTTTTTTTTTTTTTTTTTTTTTTTTTTTGGCTTCAAGACCCAAACGCATGTCTCTCTTCTTGG
CACACTCTTCCCAACTTTTTCTGGCTAATTGCTAGTTATTTAGTTTGAATTAATGTCACTCCCTCG
GCCTGGCGCGGTGGCTCACGCTGTAAATCCAGCACTTTCGGACGCCGAGGAGGTCATCAGAGGTC
AGAGATCGAGACCATCTGCGCAACATGGTGAACCCCGTCTCTATTAATAACAAAAAATTTAGCCA
GGCGTGGTGGCATGTGCTGAAGTCCAGTTACTCGGGAGGCTGAGGCAGGGGAATTGCTTGAAGAGAT
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ACCGCTTGTGTATCTCTTATAAGCCCCATTCTTTTTCTTCTTGGCATTGATCAAAATAACAGCTTTAT
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ATTTCAACTCAATGATTTTACCTGCTGCGTGAAGGAATGAATGAATCTTTATGTCCTCGTGCTTAACATAAGATC
TGCCATATACAATGGACTAAAAATAGTATTAGCTAAACTGAGTTACGGAGAAGATGAAGTATTAAAT
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AACTCTCTTCATTTCATTTGCCCTTCAATTTAGTTAACAGAATCTGTTTCATCTAAGTAGAGCAGAGAAAAAC
TTCATAATTTGCTGTGCTGTGTTATTTCCAAACATTTAAACAAAGGTGAATAACTGAGTATTCTTCCC
TGTGGTACATACTTGATGTGGGCATTTTAAAAGATTGATCAAAATCTCCTTTCAGCTGGATATTTGAGTAG
GCACAACCATTAAGAAATTTTCCCTAGGGACTTACTTTAGCTCTTAAACTATGTAACCTGAACAAGCAA
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ACCCAAAGTATAAGAAAAGAGGACATGTTAAGGCTTGTCTATTTATTAGAAAATATATAAGAGTTCT
TGGCTTAAGAACTCTTCTGGCTATCAGCTCCCTGATGTGAAAAAGTAAATAGCAAGGGGTAGCATGGAG
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AGTCCAGACACATCTTTCCATAGGCCAATTGAACATTTTCTCTGTAATTTCCACAATAACCATTTGCAC
CAGCATGAATGGAGAGGGTCTGAGTTCTTCTGGGTGAGTAAAGGTTGTGTCAGTTATCTGCTCTGTCA
CCAGGATTTAGAGGCAGGCTCATAGTACTCTTGTAAAGTTGAGGTTCCGCTGTGGAGGCTGCAAAAAAG
AGGGAGGAGAGAGAGTGAAGTTCTTCTTGGCTCTGTGTCAGGGATGTGATTAGAGGACCTGGGAGGGC
CTTCATCTACGAGGGGTTGGAAGTGAAGTGGATGTGTGTTGATGACCTGGTAACGTGTACAGCCCCCT
TCCACCCCATAGTAGTACGGGATTTAATGCCCTCAACAAGGAGGCTCTCTGAAGGAGACTGACTTTTCTCT
CTCTCTCTGAATGATACTGCTGAGAGAAATACTCACTTCTCTGCTTGTGTTTCAACAAGTATGGACTTCC
TTACACAAAAAGAACTTTTTTGTCTTTTGTCCCCCATTTCACTGGAAATCTATCCACTGGGCACCACTG
TTGGTTGGCTTCTTTCATAGATTCCTTTATGTTTCAAATTTTAAAAGACAATAATAGCAACAAAGTGA
AATATGGATTTAAGCTAGGAAAGCAGAGAACTGAAACTTTTTTCTGCAATCATACTTCCAGCTTCTT
CAGCAAGATCTGCTTGGCTGGGAACATGCCTTCTGAGAATTTTACATTTCTAAACTGCTGCTAAATGCT
CCATGCATTTATTCCTCAAACCTCTCAGGGAAGATAGCACTGGCTTTTCACTCATACCAACCATTTCTAA
GGTAATGGACCAAAAGTCAATTTCCACTTGAAATATAATCCTTCTAAATGAATCATGCAACATGGTTTTTA
CCTCAATTTTTCAGAACTCACTAAGATGATGATCCTCTGGCCATATTTTAAAAATTTCTCTTATTGT
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TGCGGGTTATCATGATATATTTTAGCCATTTGCTTGACCCATAGCTTACAACAGTTAAAGAACACTA
ACATATAACATAGAGTTTGGCCAAAGCCATTAGCTTTGCATGTTAAACAGTGGGCAGAGGAAGGCTG
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ATTTGTTCAAGATCGTCTGAGAGGAAACATCTCAAAGTTGGAGGTTGTTGAAGAGTCAGAAACAAAT
GGGTCTGGGTAAATTTTCAAACAGGCTTTTTGTCAATGTGACGTGAGCTGTTTAAATATTGTCAATTTG
CACTCAGCTGTTTAAATATTGTGCTTTGTTATAAGGATAGGCACTGTGGTCTCAGGTTCTTAAAGCTTTA
CATTTCCGTTATTGTTTACTTCTGCATTAGTAGAGTAGATGTAGAGTAGATGCCACCTCTAGGAAC
CTACCAGCAGCATCTTAGACTAGAAGCTCCCTCTTAGGACTATAATCTCTGTAGCTTCCACTCTC
CCACCCCTTATTCTTCTGAGCTACTTGGTCTTTGATACTTACTATAACTTTCTATTCTTATCAT

FIGURE 1, page 82 of 93

83/139

AAACAGTTTCTGATTTCATTTCTCTGGTTTCATACTAAGCCCCATAATCAGTCACTGCAAGATTACC
TTCTAGAATTTCTGTGCCCTCAAGTTTCTCCATATCTAGAGAGTCAGTCATCTGCCCTTGAGCCACATCC
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GAAAAAGGTATTTCTCTCTGTGATGATATTGATTCTGCACTCATCTATTTTCATTACTGTCTCCTTCCC
TCCCTCCCTCAGTCCCTCCCTTAGTCTATCTCACTCTACCATCTTTTCCCTTGGACCTTCTGACATTCAA
CATCTTGGTTCGCTCCTATCCAGCCACACCTCTGACCATTCAACCATTTGTCTCTTGTATTGGTTCCACCT
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85/139

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86/139

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CTGTAGCCTGGGGAATGTAGGGAGTTTATGATGAATTTGTGGGAGGTGAGAAAAGGCAGCAGGTGTC
GAAAGACGGGAATCCCTGCACTGTTCTAGATGTTAGGAGCCATTTCCATTACATTCAGCACCTCAGG
AGGAGAAGCTGCCATCACCTTTGTCTCTCAAGAGAACCAACAAAGGAGAATGCCATCTCCAGATACCTC
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AATGTATGGACCCAGTTTAAAGGAAAAATGCTTTGGGAGGCTGAGGCAGGTGCTTGCCTGAGGTGAG
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ACGGTGGCGGGCACCTGTAATCCCAGCTACTCAGGAGGCTAATGCAGGAGAATCACTTGAACCTGGGAGG
CAGAGGTTGCAGTGAGCCAAGATCTGTCATGCACTCCAGCCTGGGTGATGAGAGCAAACTCCATCTC
AAAAAATTTTAAACAAAAGGAAAAATGCTCCCTGATTCCCGCAGTGCTGACTTAAAAATGTTCTTAG
TATGCCAATGTTGCTTAAATATGAATGACTGTAGCTTCTACTTAAATTTGGCAACCCGACCAAAATATAAC
TGCAAAATGTTTATAGCTCTTATGGAAGTATAAAGCAAAACAAATCTTAAATTAATAACAACTAAGAG
GGAAACTGATAATAACAATGTTTTGTGAATTAAGTTGCTGTTTGAACATGCCTGGGGCAGACTCCTGG
CCTCTTTGCTGCTGACATGAGAGGCTACCAAGGATGTGGCCACAACCTGGGCTCTCCAGCAGCTTGTGTC
GCTCAGAACTGTGCCAAAACCTTTGCTCGCCAGTGTCTGCAACGTCCATCATTTGGATTGGCAGGAA
CAGCATATTATGCACTTTGTTGCTTCTGATTATTTAGTTAGATACTTAAATATAACTGCTAGATTCTA
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CTGTATGAGCACCCACCCAGAGATTCTTATGCAATTTATCCAGAGTGGTGCCTTAATATCAACATTTG
TTTAAACCTGACCCCAAGACTAAATTTGTGACCGGGATTAGAACCATTGACTTAAATTGATGAGAAC
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FIGURE 1, page 86 of 93

87/139

ATATAAACACCTGACATTAGCCAACCATGTTGATGTTCTGATTATGTTACTGCAAAGGAGTGTAGGGT
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88/139

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89/139

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TGGAAACCATCATTCTAAGCAAACTATCATGAGGACATAAAACCAAACTGCATATTTCTACTCATAG
TGGGAGTTGAACAAATGAGAACACATGGACACAGCACAAGGAACATCACACACCGGGGCTGTGAGGGGT
GGGGGGCTGGGGGAGGGATAGCATTAGGAGAAATACCTAATGTAATGATGAGTTGATGGGTGCAGCAAA
CCAACATGGCACATGTATACCTATGTAACAAACCTGCACGTTGTGCACCTGTACCTAGAACTTAAAGTA
TAATAAAAAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGTGGCTTTTACCTCCCAACATGATTTCAAGG
CCTCTCAGGATTTGGAACCTGTAAGTCCAGTTAAACCTCTTTTTCTCCAGTCTCGAGTATGTCTTTAT
CAGCAGCGTGAAAATGAATCATACACACACAGAAAGTATATCTTTACAGTTCCAGGATGGACTGCAA
GTTTGGCTCTAAATTTCTTTGCTGGCCAAAACAAAAGAACATTTTATTATAAGGTTTACAGGCTT
TTAATTGAAAAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGTGGCTTTTACCTCCCAACATGATTTCAAGG
CCTCTCAGGATTTGGAACCTGTAAGTCCAGTTAAACCTCTTTTTCTCCAGTCTCGAGTATGTCTTTAT
CAGCAGCGTGAAAATGAATCATACACACACAGAAAGTATATCTTTACAGTTCCAGGATGGACTGCAA
GTTTGGCTCTAAATTTCTTTGCTGGCCAAAACAAAAGAACATTTTATTATAAGGTTTACAGGCTT
TTAATTGAAAAAAGAAAGAAAGAAAGAAAGAAAGAAAGTGGCTTTTACCTCCCAACATGATTTCAAGG
TATTTCTCACAAGTAGGACTTTGGCAAGGATTGTGCAACTGACAATCAAGTCATTTATCCGTGGTGA
GAAACCGGATCAGATCTTTACCAGTTAGGGGATGATCCATGTGTTTGATAATCACCTTGGTGGTGA
CAGACTAAAGGTCTCCTATGAAAACCATTAACCTTACACTATAGCTGATAGGATGCACTGAAGCCCTTAC
CGCTGACTGCATGGATGAGAGCTAGGCCAGAGCATTGGCAGGCAGAGTTTATAACATGGGGCAGGAAGCA
TTGAAATTTCTATCCACCTCTTGGTGTATCAGGTCAGGAGTCAATCTCCTATCTTCTCTCTGGATCG
CTTCTCTCTGAAGTGTCTGGCATAGATGTCTAGGTATAGCTTGGCATGGTGGTGTGTGCCATAGACCC
AGCTACTTGAGAGGCTGAGGTGGGAGGATTGCTTGAGCGCAGGAGTTTGAGGCTGCAGTGAGCCATGACC
ACACCACTGTACTCCACCTGGGTGACAGAGCAAGACCTGTCTCTCTTTCTAAAAAACAACCAAAAC
AAAACAAAACAAAAGAAAAAGATGTCCAAGTGTGTTCTGGTTACTGCTGCTGACTGCTAAATTTAAC
AGCTAGAAAAAAGAAATTTGGACTCTATGGATCATAAATTTGGATAAGACACAGAGGGAATGGCTTTGCT
CATGTTCACAATGTCTAAAGTCTTAAATGGGAGAGTCTGCAACCAAGGGTAATTTGAGAGTTATGGGCT
GGAACCACTTGAGGCATCTTTATTCATAGGCTAGCAATGATGTTGGCTGTTGGCTGGGACGTCAGCTG
GAGCTGTCAACTGGGAGACCTGTCTGATATCCAGCATAGGACACTAGACCTCTCACAAGTGGCGAGGG
CTCCAGAAAGCAAGTGTCCAGCTGACAAAAAAGAAAGTTTCATAGCCTTACGACATGCATTTAGAG
TGGTAATGTGCTCACTTCCAGCCCTTTCTGTTGATTACAAGTGAGTCATGAGTCCACTCAGTTTCAAGGGA
GAGGGCCAGATCCATATCTCCATGGGAAGAGTGCCAAGAACCTTGTAGAAAAGCTTGTGGATAGGA
GATATTGGTGTGGTCTCCTTGGAAAACCAATCTTCCAGAGTGTGCAAGAGAGGCTTCTGCTCTGCAT
TGTGGCTTAATTATTGTTGAAATACCAGCAAGAAAGGTAGGATCCAGGGAACAAATGTATCCAGGAT
GTTTTGGTCTGCCCTTTCTAGGAAAAAGAAACCTCAAGCCTCTGAGACTAGGTACCCCAAGTGGGA
CTAGAAGTTCACGTGGAACCTTTCTGCAAACTCCTCTGCAATAGATGGACTGTGCATTTTCCAATGTGT
CTTTACATCATCTCTTTCTGACCTTGGGAAGATAGTAAGTGTGAGTAGGATAGGAAATCCAGAACCTG
ATTGTTTTAAATATATTACAGATACAAGTAATGAAAGAGGCTCCTAAGGAAAAATATAGATCCGTAAT
GGCTTTGGTCCCAAGCTATTAGGCTATAATATTTTATTACAAAGGCTATATTTTATTACAAATGTATTT
AAATAAATACTTAATATTTATTTAAATAAATAATATTTATTTATTTAATAATTAATATTTAATAA

90/139

TATAATATTTCTTACAAAAATTA AAAACTGGGACTTTATATTTAAAGGTGAGACATTAAATCTTTTTTAA
AAAGTGCACATGTAAGATTTTTCTCAAGTCAACTGAACCAAGTTCATCAGTTTCACTATGAATGTGTG
ATGCACCAAGTATTTACTTTCTAGAACATCTAGTAGACGTCACTAAAAAATTATACCAAGTTGAAAAATG
TCACTGAATCAGAGGCATGTGGTTGGTTATGTAGTCATCTGTGCCAGCTGGGAATATAGCAATACCAAAAT
GAACAGCACTGCCATGTTCCCTTGCTGGGTGCCAGCAAAACACTCATCTTCACTGTCGTCTCTCTTTGA
GACCTCTTAGAGAGGACTTTGATGAGTGTATGGTCTTATACACACTAGTCTAACAATACACATTTGCTCA
AGGATTGGGTTACGAGCAGGCTCTTCACCTTTCAGGTGAACAATTACACATCAGGAGAAGGATGGAAGTT
TCCTATCTATGAACAAATATTTCCCAAGCAATAATCTCTTTATTCAACTCACATAATGAGAAGTCAGTT
CCTCTGTGCCATAAAGCAATCTCTTTGAAGTCTTCAGTAATGTTGAGGGTTTTAATGTTGAGGGCTTTAT
CAAACTAAACATTCAGTGTCTTAGGCTTTCCCTTAGTTCCTTTGAGCAAAATTGGTTGCTATGAAGTATG
TTAGTGTTCGGAATGAATGGATAGCATGATGGGGGATGTCTAGGTGGTTCCAGAATTTAGATTGTGGTTT
CCATAACAAAGTGTGGCAGTATTGGCATTAGGGAAGAGAAATGACTTCTAAATAACTTCTCAAAGTTTAC
TAAAGCCTTAAAGATGTAGGAATGGCCACAAAAGGAGGTATACAAAACATTCCTCTGTCTTTATTCCCTC
TTTATACAAACGTATTCACTTTCCCATCAGCAAGTCATAAAATACTTCTCATCTTGCATTACAGTAGGAC
ACCTACTATAACAATAGGCTACAAAATGTATAATGGCTCAAACACCTAGCAGTTTATTCTTATTACTT
AACAAATGCTGGGTCCACGAACATGTTGATATCATAAACCTCTTTTATGTGGTCACTCAGGGACTCAGGCT
GTTGAGGGCTCTGTCTCATGAATGGGTGGCTTCCAAGGTCATCCTAAGAGTTATCTCCATTCTAACCAG
TCCAGCCAGAAAGGCAGAACAGGCTTGGAGGAGCAAGATATCCATGGATAGATCATCCTCTTAAAGTCA
TTGTAGCATTTGTATAGGGCTCTTTTCACAAAACAAGGATACAGTCCATGTTTTCAAGATTTTACATTTT
AGTAGCCACAATACAAAGAGCTAAGATAGTCTTGTGATTTGTCTCATGGCTGTTAATGGAGAGTGT
TAAAAGCACTGATATCAGGGCTCCACCTCAGCTTCCAATCATCAGGTTTGGATGGAACCTGACAGCTGC
ATCTTGTAAAACTCCACGGGAGATTCTGAGAGACAGCCAAGTTTGAGATTACAAAACCTTAAGAGAAAA
ATCTCCTTGAATGGCATAACAACTACCAGTCTAATAAAACATACATATTCCTTTGACTACTCTTAAAT
GAAACAAATAGGTATTAATTTACCTGTACATATAATTAATAATGTAATGTATTTTATAACCATCATATAA
AGGAGAAATATATTAACATATATTAATAAAATGATATATATTTCAATGCAGATGCCAAGCTTGACT
AAAGTAGGAAACATTAATAAGTAATAAAATGCTTATATGTACTTATAATGAATGTTTGGCTATGAGAAGA
TGATCAGAGGCTTTTGTCCAAGAAGTACAGGCATATGAAAAAGTAGAGCAAGAGATGGACACCAGACTG
AGAAAACATAAACTTAACCAACCTATTGTTGTATGATAAAAGGAGAGAAAAAATGATTAGTAAAAAT
ATGCTACCGTGTGGTCTGAATGTTTGTCCCTTCCAAAACTCATGTTGAAATTTAATCCCCCATGTGGCAG
TATTGAGAAGTGGGACCTTTAAGAGGTGATTGGTTCAAGAAGATTCTGCGCTCATGAGTGGTTGAACCA
TTCACGGAATAACGGGTAAATGGATCAATGAGTTATCCAGGAGTGGGACTGGTAGCTTTATAAGAGAAG
GAAGAGAGACTTGGCTAGCACACTCAGCCTCCTTGCCATGTGAGCCATCTCGGACCCCGCAGAGTCCC
CAGCAGAAAGAAGGCCCTCACCCTATGTGTCCCTTGACCTAGGATTTCTCAACCTCCATAACTGTAGGA
AATGAATTCCTTTCTTTGTAATTATCCAGTTTCAGGTATCTGTTATAAACAACAGAAAAATGGGCTAA
AACACACGCCAAGAAAAATGAAAGACTGTGGAAGTGAAAGAAGATAAAAAATGAAGTAATTTGCAAAAT
GAGTCTGGCTTTATTATAAGTGTATTGTCAAAGTGATTCCCTTTGTTATAAGATGAAAAAGAGCCAAAAT
GGATAGAACAATCTTATCTTATCTTAATATCCCACTACATTCAAGGCAAAATATTCACTCAGTCTCTGAGAC
TTAACAAGGCCCTTGAGATGATATCCTTTGGATGAGCAATGGAGAAGACAAGATGGATTGGAAAAAGAAA
CAAAACAACAAAAAACAATGTAAGAGGCTATCAGGAAAACCTGAGAGACGATGTCAATGTAAACAGATA
CAAACTCAAAATATTTAATATGTACATTGCACAAAAATGGACTTCTTATCATGTTACAAAATTTATTT
TAAACATATAGGAGGCAACACAAATATTTCAATTGATGTGACTATTTTATAAATGTTGGCTCTAATTTT
ATTTAGTAGAGTCTTACATCTCCTCTCTACATATTTACATCCGGTGTATTGTTTTGTAGTACCTGTTT
AACTGCACCTGAAATCATTTCAATTAAATGCATGGTTGAAAAGCTGACATAATACATTCAATTGCCAAT
GCATAAAGTGAATAAGCTATTTAATAATTTGGAGAAAAATATATCCATTAAACTTCCTTCTCTATAACC
AGATTCTACATACCTGACCTTTTGGGCACAGCCATGTGAAAGCTTTTCAAACTTTTCACTACTTTTCTT
AGACGGAGTCTCACTCTGTCAACCCAGGCTAGAGTGCAGTGGTGGATCTCGGCTCACTGCAACCTCCACC
TCCAGGTCCAAGTGATTCCTGCTCAGCCTCCGAGTAGTGGGATTACAGGCACCTGACACCACAC
CTGACTAATTTTGTAAATTTTAGTAGAGACAGGATTTACCATGTTGGCCAGGATGGTCTTGAACCTCTC
ATCTCAAGTGTTCGCTGCTTGGCCTCCCAAGTGGTGGTTACAGGCATGAGTCATTGCAACCCAGCC
ACTATAGATTTTATTGTTAGTAGATTTAGTTTCACTAGGGCATTTGAGAGGCATAGGAACCTGGAACAAAT
CCTTCATTGTTTGGGACTGCCTTGACATTTGAGGACATCCAGTACAGTCCCTTCCAGCAAGTGGCAGCA
GCAGCCTCGGGCTGTCAAACACCTGTTAGGGACAGTGCACCTCCCGGAACACAGAGAACCACAAATC
ATAGGAGAAGCATACAACAACATGTTGTTATCGGACGGTCAGCTTCAGTGGCATTGTTGAGCAAGCAC
ACTATTTGGTTGTAGAATGAGTCCCTGGCAGGGCACCCGAAGGCTGATGTGTGACTCATCCTTAGTACC
TCTGAGAATGCTGAAATCTCCTCTCTCCAAGCTGAGTGGCAGCTTCTGGTCCAGACTACTTAAATTG
TGACTTGAGGAATTTCTTCACTTTTCCCTTTGAGTCATTCTGTTTTGATCAAGATGCGATAGAAATGAA
GGATTTCTTTCAGGCTCTGCTGTACATCTCTCTTTGGGAACAGATAGAAAATCTGGCCTGGCTTGAAGA
GTTTGTCTCTCAAACTATCTGTAAGCCATAGGCATCAGCATCTCTTACTTCTCCAGAGACATTTAGATGTG
TCCCCATCTCCATGGAGGCCATGGCAAGGGGACCCCTAGTTGTACTAGAGCTTCTCTTGGGCACAGC
CACACTGCACAGGCACTGAGTGTACAGCACAGCTCCTCCAGCTTCCGGAAGACTCCATTATCTAGAAAA
GTGCTGAGAAATGGAGAAGGGGTTCTCTGGGGTGGAGATGGAAGAGGAAAAGGAAGGGAGAAATGTCC
AAGCAAAATGAGAGGAGGTTGAGGACAGCAGAAATTGAGAGTGAGGGAGAGGAGAGCAAGAGACTGGG
TTGAGATGTCTTGTACATGGGGGTGCTCTCGTGGCTTCACTCCCTTTCTGTTTGTACCACTCCGTTTCCC
CAGACTCTTCTTAAATATCCCTTATTGGCTACAAGATCCAGATTGCCTAGAAGCTCAGATTGCTGACA
GCACCTCAAGACTGGATAATGACATATAGATTTTCTTGTGTTCCATCTTTGGGATTTGGAGCAATCTCC
AGGCTGCAAAAGCTTACCTTGTGCAATAATTTTGGAGGTCACACTGTCTGCTCACTGTCTAT
GCTGCTGGGCACAGTGGTGTGGCCATCCAGGGTGGGAGAGACCCTGGGATATGGAAATTAACAGCAGC
CCTGTTTTGCTCTTGCAGTGGTTGCCAAAGCACACGAAGCATTCTGGGAATCTGAATTTCTGTTGTTCT
CCCAAATGGCCCTGAAGGGCAACAGGCAGCACACATGGACCACATTTTGGCAGAAAAGTCCAGAAAGAA
GATGGCTGCTGTTGTCACTATTGGCATTTCAACAGGACCTATTTTATTTTCACTATATTGTCACAAAC
TAGGAAGCATCTGCTGACAAGGATGAGATGATAAGCTGTATTGATGCCAAAACAGGACTAGAAAAACAGG
CTTGTCTGCAAAATGGCCTGCATCTGAGAGTCCGTGTTAAGAACATTCTCTCTGCAAGCAATATCTG

91/139

[illegible]

FIGURE 1, page 91 of 93

TACTGAGTGAAGTGAACAAAGAAATGAGGGAATGAATGGATGAACAAATGGCTCATGGCAGGCTTTTCCCT
 GCCCTGTGAATCTCGGCTTCTACTTGGTAAGAAGGTGATTGCAATCTCTGTTCTCAGGGTTCCTCCCAAGGAT
 TCCTGTGTGAACAGATGAAGGAATCAGCTCTGTCAAGTGAAGTGAAGTGCATGCATCAGAGTATACATTTT
 CAGTCTCCCTCTCTCTTTTCTTTGTAGTATTATAGAGAGGGAAGCCATGAGTGGATTAGATGCCAAA
 ATCCCTGGCTGAGAGAATAACCTTACCCTGGAGGAAAACATATTAGCTTTGACTCTGAGCTGGGAATTC
 GGTGATGTTGTAGATTCAATGCATTGCAGTTGGGTGTTTTTATTTGTTGAAAGGAATTGCTGAATTTTCA
 AATCCATTAACTGCTTTGTCAAGATTAGCAAGCCCTAATTAGTTAATCATTAAGTAAATTTGCATTAATATATA
 CAACCTTGGCTGATTTTACTTGGCCAGCTGTGGCAGAGGCGAGCAGCAGGAGGAGCAAGTCTGTAGAGTTT
 TGTGGAATCGTGTGAAAGCTGGAGAGGTTGCTTCTCTTTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCT
 TGACACACACACACATACACACACACACAATTGTAATAATAATAATATTTTGGTTCCTCACTAAGCCA
 ATCTAAATCGCAGAAGTCTATTTTGTAAAGTAAGCTTGGCCCCAGGCATATGTTGCTACTCAGAGAATTT
 AATCATCAGATTTTCACTGACTGTAACAGTGAATCATCAGTTGCACAGAAGAACAGTGGCAGATCCAGG
 GGCATTTAACTTTTATAGCATTTTAAATGAAAAAAGTAAACATTAACACAGTAATTTAGATC
 ATGCTGTAGGCCCTGAATAGCTTTGATGTTGTGTTTTCATGGCAAGTCTCCAAGTGTAGCTGAATTTTCC
 CCTACTAAAAATTGCAAAATTTTCTAAGACCTTCTCTGGTCTGCTACTCATGATACATATTTCTTTTAA
 AAGAAATTTCAAATAGATAATAGTTGTTCTCTCTCCCCCCCCCAGCCAGTGTGTTGGGGGCGACGA
 GAGTTGTGGCTAGTGGAGGAGCAGAGGAGGAGTAGGGAAGAAGGAATGCCATTTGCTTACATTTTCC
 CTCTGCCCATTTTCCCCCTGCCCATTTTCCCCCTTGTTTTCTGAACTGAACTGAGCTCTGGGCACGTGT
 TTAGGCTCTAGCAGGGGACAGGATAAAGCTTGTCTCTAGGAATTGCACTGAGGTTGTGAGTGTGTGCA
 CGTGTGTGTTTGGAGGCGGAGATAAACAACAAATAAATAAAGGAGAAATTCAGGCAGTGATAGAGT
 GCTGAGAAAAACACACAGCGTGTGAAGAGGAAGGCTGAGCTGCAGAGCTTGAAGTCTGCTGCCACTGGG
 TAGCGGTAGGCCCTTCCGAGGAGGCGGCATTTGAAGACCGGAGGAAGTTTCATGCCAGCAAGTAGGAACA
 GCAAGTGTAGGTCCCCTAAGTCTTGGGGGAGCTTAGTTCCTTTAAGGGCAGCACAATAATCAGTGTGGCT
 CCGGAGAGCACATATTAGGGGAGAGAGGAGGAGGAGGCTTGGAGACATGGATGGAAGCTGGACCAAGTTGGGC
 TCTGTTGAACATGGAAGGCAATTTAGATCGTATTCTGAGTTAAATGGGAAGTGCAGTGAGAGATTTAA
 ATGGAGCGCTTGAAGCTCTTTACTCATTTTAAATACCCACTCTCTGCTTGGCTGAATATCTCATGTTGTCT
 TTTTGTAGAAGCTTTGGCGATCTTATTGTAATGCATTTAGGTCTTATTGGAGGGGAATAGGATCTCATTTG
 AGGCCACGGAGGTCCATGGAAGTCACTTCATAGCAATACCCCTGAAGTGGCTGCAGGGAGAGTGTGAG
 GGTGGGACCGCCCTGGTAGGAGTGGAAATGAAAAACACAGCCCATGAGTTGCAGATTAGGGCTTCTG
 AAAGCCCTCAGCTTTCCAGACTCCCATCTAAAGTGGGCTTTTAAACAGGAAGAAAGAAATGCTTAAG
 TGTCTTTGGAGTTTCTCTTCTTCTTCTTCTTCTAGGGATTTTCAAGTCTCTGGGGCTCGGGTTGGCTCTAAA
 GTAGTCTTTCTGTCTCTTCCCACCTACAGTAACAAAGGATGGAGCATCTGTACAGCATGAAGTGAAG
 AACGTGGTGGCCCTCTATGACCTGTCTGGAGATGCTGGAGCCACCGCTACATGCGCCCATAGCC
 TGGAGGGGATCCGTGGAGGAGCGGACCAAGGCACTTGGCCATCTCGGGCTCTACTCATCGCATTC
 CTGTGCAAAAGTATTACATCACGGGGGAGGAGGAGGTTTCCCTGCCACGGTCTGAGAGCTCCCTGGCTCC
 CACACGGTTGAGATAATCCCTGCTGCATTTTACCCTCATATGCACCACTTTAGCCAAATTTGCTCTCCT
 GCATCACTCCGGCATGCATCCAACCAATGGCTTTCTAGATGAGTGGCCATTCATTGCTTGTCTCAGT
 TCTTAGTGGCAGATCTTCTGTCTTCTGTTGGGAAGACGCCAAAGGATTCGAAGCTAAATCTTTGTAACA
 GCTCTCTTTCCCCCTTGTCTATGTTACTAAGCGTGGAGTTTCCGTAAGTCTTTCACAGCTGAATCAGTCT
 ATGGGTTGGGGCTCAGATAACTCTGTGCATTTAAGCTACTTGTAGAGACCCAGGCTGGAGAGTAGACAT
 TTTGCCCTGTGAAGCACTTTTAAATGGCTCTAAGAATAAGCCACAGCAAGAAATTTAAAGTGGCTCTCT
 TTAATTTGGTGAATTTGGAGAAAGTAGGTCAAGGTTTATATAGCACTCTTGTATTTCCATGGCAATG
 CATCCTTTTATGAAAGTGGTACACTTAAAGCTTTTATATGACTGTAGCAGATCTGGTGAATTTGCA
 TTCACCTCCCTTATAGGAATACAGGGGCCACACAGGGAAGGCAGATCCCTAGTTGGCCAAAGCTTAT
 TTTAATTTGATACACTGCAGATTCAGAGTGTCTGAAGCTGTGCTGTGGCTTTCCGGTCAATGGGTTCCA
 GTTAATTCATGCTCCCATGGACCTATGGAGAGCAACAGTTGATCTTAGTAAGTCTCCCTATATGAGG
 GATAAGTCTCTGATTTTGTGTTTTTATTTTGTGTTTACAAGAAAGCCCTCCCTCCCTGAATCTGCAGTA
 AGGTCAGCTTCAGGACCTGTTCCAGTGGGCACTGTACTTGGATCTTCCCGCGGTGTGTGTGCCTTACACA
 GGGGTGAAGTGTTCACGTGGGTGATGCATGATAGGGTAAATGGTAGTTGAAAGGACAGGGGCCCTGGT
 GTTGCAATTTAGCCCTGGGCGATGGAGCTGAACAGTACTGTGAGGATTTGTGGCTACTAGAGAACAA
 GAGGGAAGTAGGGCGAGAACTGGATACAGTCTGAGCACAGCCAGTCTGCTCAGTGGCCCTGCACAG
 GCTGCAGCTACCTAGGAACATTTCTTGCAGACCCCGCATTTGCCCTTGGGGGTGCCCTGGGATCCCTGGGG
 TAGTCCAGCTCTTATGCTCATTTCCAGCGTGGCCCTGGTTGGAAGAGCAGCTGTCAAGTTGTAGACAGCT
 GTGTTCTCTACAATTTGCCACGACCCCTGGGCGACGGGAGAGGGTGGGACCGCTGCTGTCTCACTACTCAG
 GCTGACTGGGGCTGGTGCAGATTAGTATGGCTTGGTGTGTTAGAGATAATCCAAATCAGGGTTTGGT
 TTGGGGAAGAAATCCTCCCCCTTCTTCCCCCGCCCCGTTCCTTACCAGCTCCACTCTGCCAGCTCATTT
 TCCTTCAATTTCTTTGACCTATAGGCTAAAAAGAAAGGCTCATTCAGCCACAGGGGAGGCTTCCCTG
 GGCCTTTGGCTTCTCTAGCACATAATAGGTTACTTCTTTTCTTAAACAAAAAGAAATGTTGATTTTCTCT
 CTGGGTGACCTTATTGTCGTGAATTTGAACCTTATGAGAGGTGATGCTGTGTTAGCCAAATGACCCAG
 TAGCTGCTCGGGCTTCTTGTGATATGCTTGTGTTGGAAGTGGATTTTCATTTTCTGATTTGTCAGT
 TAAGTGATACCAAAGGACTGAGAATCTGGGAGGGCAAAAAAAAAAAAAAAAAAGTTTTATGTGCATTA
 ATTTGGGGACAATTTATGATCTGTGTGTAAGGATATGCTTAAGAACATATTTCTTTGTTGCTGTTTGT
 TTAAGAACACCTTAGTTTGTGTTAAGAACCTTATATAGTATAATATATTTTGAATTTACATTTGAT
 GCTTGTTTATCAGACAATGAATGTAGTAAATTCGTTCTGGATTTAATTTGACTGGGTTACATGCAAAA
 ACCAAGGAAAAATATTTAGTTTTTTTTTTTTTTTTTGTATACTTTCAAGCTACCTTGTGATGATACAG
 TCATTTATGCTCTAAGGCTGGTGATTAATCATTTAAATGAAGATCAATTCATATCAACTTTTGTATCC
 ACAGTAGACAAAATAGCAATAATCCAGTGGCTATTGTTGGATATTGAATGACAGACAAATCTTATGAGC
 AAAGATTTATGCTGAAAAGGAAAAATTTACAGGCGAGCTAATTTGCTTTTACAAAATATCAGTAGATA
 TATTTTTGGACAGTAGCTAATGGGTGAGTGGGTTCTTTTAAATGTTTATACTTAGATTTTCTTTAAAAA
 AATTAATAATAAACAAAAAAATTTCTAGGACTAGACGATGTAATACCAGCTAAAGCCAAACAATATAC
 AGTGGAAAGTTTTACATTTATCATCAATGTGTTTCTATTATGTTAAGATACTACTACATTTTGAAGTGG
 CAGAGAAGCTTATGATGATTGAATGTTTGGCCAGGGGCTTCCAGCAACTTTGGAATCTCTTTGTTATTT
 TATTTTATTTTATTTTATTTTATTTTATTTTATTTTATTTTATTTTATTTTATTTTATTTTATTTTATTTT

93/139

TTACTTGAAGTGCCACTAATGGACAGCAGATATTTTCTGGCTGATGTTGGTATTGGGTGTAGGAACATGA
TTTAAAAAAAACCTTGCCTCTGCTTTCCCCACTCTGAGGCAAGTTAAATGTAAAAGATGTGATTT
ATCTGGGGGGCTCAGGTATGGTGGGGAAGTGGATTTCAGGAATCTGGGGAATGGCAAATATATTAAGAAGA
GTATTGAAAGTATTTGGAGGAAAATGGTTAATTCTGGGTGTGCACCAAGGTTTCAGTAGAGTCCACTTCTG
CCCTGGAGACCACAAATCAACTAGCTCCATTACAGCCATTCTAAAAATGGCAGCTTCAGTTCCTAGAGAA
GAAAGAACAACATCAGCAGTAAAGTCCATGGAATAGCTAGTGGTCTGTGTTTCTTTTCGCCATTGCCTAG
CTTGCCGTAATGATTCTATAATGCCATCATGCAGCAATTATGAGAGGCTAGGTCATCCAAGAGAAGACC
CTATCAATGTAGGTTGCAAAATCTAACCCCTAAGGAAGTGCAGTCTTTGATTGATTTCCTAGTAACCT
TGCAGATATGTTTAAACCAAGCCATAGCCCATGCCTTTTGAGGGCTGAACAAATAAGGGACTTACTGATAA
TTTACTTTTGATCACAATTAAGGTGTTCTCACCTTGAATCTTATACACTGAAATGGCCATTGATTTAGGC
CACTGGCTTAGAGTACTCCTTCCCTGCATGACACTGATTACAAATACTTTCTATTTCATACTTTCCAAT
TATGAGATGGACTGTGGGTACTGGGAGTGATCACTAACACCATAGTAATGTCTAATATTACAGGCAGAT
CTGCTTGGGGAAGCTAGTTATGTGAAAGGCAAAATAAGTCATACAGTAGCTCAAAGGCAACCATAATTC
TCTTTGGTGCAAGTCTTGGGAGCGTGATCTAGATTACACTGCACCATTTCCCAAGTTAATCCCTGAAAAC
TTACTCTCAACTGGAGCAAATGAACCTTGGTCCCAAATATCCATCTTTTCAGTAGCGTTAATTATGCTCT
GTTTCCAACCTGCATTTCTTTCCAATTGAATTAAAGTGTGGCTCGTTTTTAGTCATTTAAATTTGTTT
CTAAGTAATTTGCTGCCCTCTATTATGGCACTTCAATTTTGCCTGTCTTTTGAGATTCAAGAAAAATTTCT
ATTCATTTTTTTGCATCCAATTGTGCCTGAACTTTTAAATATGTAAATGCTGCCATGTTCCAAACCCAT
CGTCAGTGTGTGTTTAGAGCTGTGCACCCTAGAAACAACATACTTGTCCCATGAGCAGGTGCCTGAGA
CACAGACCCCTTTGCATTCACAGAGAGGTCATTGGTTATAGAGACTTGAATTAATAAGTGACATTATGCC
AGTTTCTGTTCTCTCACAGGTGATAAACAATGCCTTTTGTGCACTACATACTCTTCAGTGTAGAGCTCTT
GTTTTATGGGAAAAGGCTCAAATGCCAAATGTGTTTGATGGATTAATATGCCCTTTTGCCGATGCATAC
TATTACTGATGTGACTCGGTTTTGTGCGAGCTTTGCTTTGTTAATGAAACACACTTGTAAACCTCTTTT
GCACCTTTGAAAAAGAATCCAGCGGATGCTCGAGCACCTGTAAACAATTTTCTCAACCTATTTGATGTTT
AAATAAAGAATTAACT

94/139

SNP Position	Reference Sequence & SNP Position Number ¹	Nucleotide Change	AA Change	Frequency in		Number of individuals with a change in heterozygosity ²	Number of individuals with a loss in heterozygosity ³	In which Populations observed ⁴
				Blood.	Tumor			
Exon 1A *	170035	C to A (ACTTGGCTCCCG)	None (5'-UTR)	0/84 0%	0/92 0%	0	0	3(C)
Exon 1A	170068	G to T (CGCAGGCTCCC)	None (5'-UTR)	1/88 1%	1/94 1%	0	0	2
Exon 1A	170256	T to C (GCATCTGGGAT)	Silent (Ser-Ser)	45/90 50%	52/94 55%	6	0	2, 3(all), 6
Exon 1A	170368	A to G (GCAGCAAGCCC)	Lys-Glu	1/92 1%	1/96 1%	0	0	2, 3(A)
Exon 1A	170487	G to C (GCTGCGGCGTT)	Silent (Ala-Ala)	7/90 8%	12/94 13%	4	0	2, 3(N,C,A), 6
Exon 1B	169812	C to G (AGCAGCGACGA)	None (5'-UTR)	1/96 1%	1/96 1%	0	0	2, 3(A,S)
Exon 1B	169823	A to G (CAAGTAAAGTA)	None (5'-UTR)	1/96 1%	1/96 1%	0	0	2
Intron 1D	167950	C to G (CTTCCCGAATC)	None (-59 promoter)	2/96 2%	2/96 2%	0	0	2
Intron 1D	167989	T to G (CACACTCTCTC)	None (-20 promoter)	15/96 17%	16/96 17%	3	0	2, 3(all)
Exon 1C	168054	C to G (TCTCACCTCTCT)	None (5'-UTR)	1/96 1%	1/96 1%	0	0	2
Intron 1E	64331	A to G (TCCGTAAATTG)	None (+42 intron)	35/96 36%	36/96 38%	4	0	2, 3(N,I,A,S)
Exon 1F	52901	G to A (CTATAGCATAA)	None (5'-UTR)	0/74 0%	0/78 0%	0	0	3(A)
Exon 1F	52877	C to A (CCATGCTCCTT)	None (5'-UTR)	2/72 3%	0/78 0%	0	0	2, 3(N)
Exon 1G 5' genomic *	18783	C to T (TGAGACGATTG)	None (-42 intron)	0/96 0%	0/96 0%	0	0	3(A)
Exon 1G 5' genomic *	18937	A to C (GTTCCAAGCAG)	None (-4 intron)	0/96 0%	0/96 0%	0	0	3(C)
Intron 1G *	19034	T to C (GAAGGTAAGTT)	None (+2 intron)	1/96 1%	0/96 0%	1	0	2
Intron 3	243187	T to C (TTTTTCTTTT)	None (+101 intron)	39/96 41%	36/96 38%	3	0	2, 3(all)

FIGURE 2a, sheet 1 of 4

95/139

SNP Position	Reference Sequence & SNP Position Number ¹	Nucleotide Change	AA Change	Frequency in Liverpool		Number of individuals with a change in heterozygosity ²	Number of individuals with a loss in heterozygosity ³	In which Populations observed ⁴
				Blood.	Tumor			
Exon 3	243055	C to T (CTCCGCAAATG)	Silent (Arg-Arg)	2/96 2%	3/96 3%	1	0	2, 6
Exon 4	306292	G to A (AGCCCGCTCAT)	Silent (Pro-Pro)	1/96 1%	1/94 1%	0	0	2
Exon 4	306382	C to G (CCCCCCTACT)	Silent (Pro-Pro)	17/96 18%	16/94 17%	4	0	2, 3(C,I,S),6
Exon 6 *	423067	T to C (TTGTGTGCCIC)	Cys-Arg	0/96 0%	0/96 0%	0	0	3(N)
Intron 6	423149	T to G (TTGTATTTTC)	None (+52 intron)	11/96 11%	12/96 13%	0	0	2, 3(N,C,I,A)
Intron 6	423163	A to G (CAGATACGATC)	None (+66 intron)	10/96 10%	10/96 10%	1	0	2, 3(N,C,I,A)
Intron 6	423220	G to A (CACACGTTTAA)	None (+123 intron)	29/96 30%	29/96 30%	3	1	2, 3(N,C,I,A)
Intron 6	423232	C to G (AATAACCTACC)	None (+135 intron)	2/96 2%	2/96 2%	0	0	2
Intron 6	423258	A to G (TTATAAAGGTA)	None (+161 intron)	12/84 13%	11/96 12%	0	0	2, 3(N,C,I,A)
Intron 8	459706	G to C (TTCCCGCTGCC)	None (-994 intron)	seq in	Coriell only	n/a	n/a	3(I)
Intron 8	459832	G to A (TGCACGTGTGT)	None (-868 intron)	seq in	Coriell only	n/a	n/a	3(S)
Intron 8	459913	A to G (AAAACAGAACG)	None (-787 intron)	seq in	Coriell only	n/a	n/a	3(N,I)
Intron 8	460024	C to G (TTCATCCCAGC)	None (-676 intron)	seq in	Coriell only	n/a	n/a	3(all)
Intron 8	460056	C to T (GTCCCTTAAGT)	None (-644 intron)	seq in	Coriell only	n/a	n/a	3(I)
Intron 8 *	460159	A to G (CATGGATGGAA)	None (-541 intron)	seq in	Coriell only	n/a	n/a	3(S)
Intron 8	460553	T to C (CAGCTTCCATC)	None (-147 intron)	2/82 2%	4/92 4%	0	0	2, 3(I)
Intron 8	460564	G to A (CTAAAGTGGGT)	None (-136 intron)	82/82 0%	91/92 1%	1	0	2

FIGURE 2a, sheet 2 of 4

96/139

SNP Position	Reference Sequence & SNP Position Number ¹	Nucleotide Change	AA Change	Frequency in Liverpool		Number of individuals with a change in heterozygosity ²	Number of individuals with a loss in heterozygosity ³	In which Populations observed ⁴
				Blood.	Tumor			
Exon 8	460929	A to G (GCCACAGTCTG)	Silent (Thr-Thr)	76/96 80%	83/96 86%	3	0	1, 2, 3(all), 5, 6
Exon 8	461199	T to C (GAGGATTCCCG)	None (3'-UTR)	1/88 1%	1/94 1%	0	0	2
Exon 8	461231	A to G (AGTCTATGGGT)	None (3'-UTR)	1/90 1%	1/94 1%	0	0	2
Exon 8	461337	A to C (CTAAGAATAAG)	None (3'-UTR)	0/90 0%	0/94 0%	0	0	3(A)
Exon 8	461520	G to C (ATTCCGCCCTAT)	None (3'-UTR)	3/92 3%	3/96 3%	0	0	2
Exon 8	461843	G to A (CCGGCGTGTGT)	None (3'-UTR)	1/90 1%	1/96 1%	0	0	2
Exon 8	461968	T to C (AGTACTTGTGC)	None (3'-UTR)	43/89 48%	46/94 49%	3	2	2, 3(all)
Exon 8	462125	C to T (GGTGCCCTGGG)	None (3'-UTR)	0/92 0%	0/94 0%	0	0	3(A)
Exon 8 *	462398	G to A (CTACCGCCTCC)	None (3'-UTR)	0/84 0%	0/94 0%	0	0	3(A)
Exon 8	462683	C to A (TCATTCAATTIC)	None (3'-UTR)	3/92 3%	5/96 5%	2	1	2, 3(1,A,S)
Exon 8	462949	T to G (TGTCTCTGGATT)	None (3'-UTR)	0/82 0%	0/96 0%	0	0	3(A,S)
Exon 8	463958	T to C (TTGCCTAGCTT)	None (3'-UTR)	5/80 6%	4/90 4%	1	0	2, 3(N)
Exon 8	463966	C to T (CTTGCCTGTAAT)	None (3'-UTR)	1/82 1%	1/90 1%	0	0	2, 3(N)
Exon 8	464237	G to A (GCCTCGTTTTT)	None (3'-UTR)	2/90 2%	2/94 2%	0	0	2
Exon 8	464735	A to T (TATTCATTTT)	None (3'-UTR)	9/90 10%	4/96 4%	1	0	2, 3(N,C,I,A)
Exon 8 *	465074	T to C (GCCGATGCATA)	None (3'-UTR)	0/84 0%	0/94 0%	0	0	3(N,C,I,A)
Exon 8	AL078582 (54404)	A to G (ATCAAAAGTGGT)	None (3'-flanking)	20/78 26%	23/88 26%	5	2	2, 3(N,C,I,A)

FIGURE 2a, sheet 3 of 4

SNP Position	Reference Sequence & SNP Position Number ¹	Nucleotide Change	AA Change	Frequency in Liverpool		Number of individuals with a change in heterozygosity ²	Number of individuals with a loss in heterozygosity ³	In which Populations observed ⁴
				Blood.	Tumor			
Exon 8	AL078582 (54460)	C to A CTCACCTCACT	None(3'- flanking)	3/76 4%	2/76 3%	0	0	2, 3(C,I,N)

* SNPs in Liverpool clinical tissue samples. Seen only one time and may represent sequencing artifacts. They are not included in the total counts of SNPs.

1. The SNP position number in the parenthesis is based on the beginning of each exon as 1. For SNPs within the introns, - sign was used for the ones in upstream introns and + sign for downstream introns referring the first base of the intron adjacent to the exon as 1.
2. For some heterozygosity calculations, individuals 47 and 48 were excluded because it is believed that the blood or the tumor sample was switched. These excluded cases were t=when both individuals showed a change in heterozygosity.
3. Loss of heterozygosity calculation includes any case where a heterozygous blood genotype became a homozygous genotype of the minor allele in the same individual's tumor sample. A change from a homozygous genotype of the major allele in the blood sample into a homozygous genotype of the minor allele in the tumor sample would also be counted

4. Code is as follows

- 1: SNP discovered in cDNA SNP project
- 2: SNP discovered in Liverpool DNA
- 3: SNP discovered in Coriell (N=Northern European, C=Chinese, I=Indo-Pakistani, A=African American, S=Southwestern Native American)
- 4: SNP discovered in CEPH
- 5: Roodi N., Bailey R., Kao W. Y., Verrier C., Yee C., Dupont W., and Parl F. F. J. Natl. Cancer Inst. 87 (1995) 446-451.
- 6: Parl, Fritz, Estrogens, Estrogen Receptor and Breast Cancer, IOS Press: Amsterdam, 2000.

Andersen TI et al. Human Mutation (1997) 9:531-536 : G to T at 838 of x03635

FIGURE 2a, sheet 4 of 4

98/139

SNP Position	Reference Sequence & SNP Position #	Nucleotide Change	AA Change	Coriell Frequencies						Liverpool Frequencies		
				N.Eur	Chi	In-Pk	A/Am	SW-NA		Blood	Tumor	
Exon 1A *	170035	C to A ACTTGCTCCGT	None (5'-UTR)	0/20 0%	1/20 5%	0/20 0%	0/18 0%	0/20 0%		0/84 0%	0/92 0%	
Exon 1A	170068	G to T CGCAGGCTCCC	None (5'-UTR)	0/20 0%	0/20 0%	0/20 0%	0/18 0%	0/20 0%		1/88 1%	1/94 1%	
Exon 1A	170256	T to C (GCATCTGGGAT)	Silent (Ser-Ser)	11/20 55%	10/20 50%	10/20 50%	9/18 50%	5/20 25%		45/90 50%	52/94 55%	
Exon 1A	170368	A to G GCAGCAAGCCC	Lys-Glu	0/20 0%	0/20 0%	0/20 0%	0/18 0%	0/20 0%		1/92 1%	1/96 1%	
Exon 1A	170487	G to C (GCTGGGGCGTT)	Silent (Ala-Ala)	2/20 10%	1/20 5%	0/20 0%	1/18 6%	0/20 0%		7/90 8%	12/94 13%	
Exon 1B	169812	C to G (AGCAGCGACGA)	None (5'-UTR)	0/20 0%	0/20 0%	0/20 0%	2/20 10%	4/20 20%		1/96 1%	1/96 1%	
Exon 1B	169823	A to G (CAAGTCAGTG)	None (5'-UTR)	0/20 0%	0/20 0%	0/20 0%	0/20 0%	0/20 0%		1/96 1%	1/96 1%	
Intron 1D	167950	C to G (CTCCCGAATC)	None (-59 promoter)	0/16 0%	0/20 0%	0/20 0%	0/18 0%	0/18 0%		2/96 2%	2/96 2%	
Intron 1D	167989	T to G (CACACTCTCTC)	None (-20 promoter)	1/18 5%	5/20 25%	5/20 25%	7/18 39%	5/18 28%		15/96 17%	16/96 17%	
Exon 1C	168054	C to G (TCTCACTCTCT)	None (-6 promoter)	0/18 0%	0/20 0%	0/20 0%	0/18 0%	0/18 0%		1/96 1%	1/96 1%	
Intron 1E	64331	C to T (CAATTCACGGA)	None (+42 intron)	5/11 45%	0/16 0%	5/18 28%	4/18 22%	2/16 13%		35/96 36%	36/96 38%	
Exon 1F *	52901	C to T (TTATGCTATAG)	None (-44 promoter)	0/20 0%	0/20 0%	0/20 0%	1/18 6%	0/16 0%		0/74 0%	0/78 0%	
Exon 1F	52877	G to T (AAGGAGCATGG)	None (-68 promoter)	1/20 5%	0/20 0%	0/20 0%	0/18 0%	0/16 0%		2/72 3%	0/78 0%	
Exon 1G Promoter Region *	18783	C to T (TGAGACGATTG)	None (-42 intron)	0/20 0%	0/20 0%	0/20 0%	1/20 5%	0/20 0%		0/96 0%	0/96 0%	
Exon 1G Promoter Region *	18937	A to C (GTTCCAAGCAG)	None (-4 intron)	0/20 0%	1/20 5%	0/20 0%	0/20 0%	0/20 0%		0/96 0%	0/96 0%	
Intron 1G *	19034	T to C (GAAGGTAAGTT)	None (+2 intron)	0/20 0%	0/20 0%	0/20 0%	0/20 0%	0/20 0%		1/96 1%	0/96 0%	
Intron 3	243187	T to C TTTTTCTTTT	None (+101 intron)	12/18 67%	6/20 30%	5/20 25%	5/18 28%	2/16 13%		39/96 41%	36/96 38%	

FIGURE 2b, sheet 1 of 3

99/139

SNP Position	Reference Sequence & SNP Position #	Nucleotide Change	AA Change	Coriell Frequencies						Liverpool Frequencies		
				N.Eur	Chi	In-Pk	AF/Am	SW-NA		Blood		Tumor
Exon 3	243055	C to T CTCCGCAAATG	Silent (Arg-Arg)	0/18	0/20	2/20	0/20	0/18		2/96		3/96
Exon 4	306292	G to A (AGCCCCGCTCAT)	Silent (Pro-Pro)	0/8	0/14	0/14	0/2	0/12		1/96		1/94
Exon 4	306382	C to G CCCCCCTAAT	Silent (Pro-Pro)	0/8	14/16	14/16	0/6	2/13		17/96		16/94
Exon 6 *	423067	T to C (TTGTGTGCCTC)	Cys-Arg	1/20	0/20	0/20	0/20	0/16		0/96		0/96
Intron 6	423149	T to G (TTGTATTTTC)	None (+52 intron)	3/20	7/20	2/18	6/20	0/16		11/96		12/96
Intron 6	423163	A to G (CAGATACGATC)	None (+66 intron)	1/20	6/20	2/20	3/20	0/16		10/96		10/96
Intron 6	423220	G to A (CACACGTTTAA)	None (+123 intron)	4/20	5/20	8/20	7/20	0/16		29/96		29/96
Intron 6	423232	C to G (AATAACCTACC)	None (+135 intron)	0/20	0/20	0/20	0/20	0/16		2/96		2/96
Intron 6	423258	A to G (TTATAAAGGTA)	None (+161 intron)	3/20	7/20	3/20	6/20	0/16		12/84		11/96
Intron 8	459706	G to C (TTCCCGCTGCC)	None (-994 intron)	16/16	14/14	20/20	15/16	5/5		13%	seq only	in Coriell
Intron 8	459832	G to A (TGCACGTGIGT)	None (-868 intron)	0/20	0/18	0/20	0/16	1/16		seq only		in Coriell
Intron 8	459913	A to G (AAAACAGAACG)	None (-787 intron)	1/20	0/18	0/20	1/16	0/16		seq only		in Coriell
Intron 8	460024	C to G (TTCATCCCAGC)	None (-676 intron)	6/20	4/18	5/18	11/16	4/12		seq only		in Coriell
Intron 8 *	460056	C to T (CTAAGAATAAG)	None (-644 intron)	0/20	0/18	0/20	1/16	0/12		seq only		in Coriell
Intron 8 *	460159	A to G (CATGGATGGAA)	None (-531 intron)	0/20	0/18	0/20	0/14	1/12		seq only		in Coriell
Exon 8	460553	C to T (CAGCTCCCATC)	None (-147 intron)	0/16	0/18	1/20	0/18	0/20		2/82		4/92
Exon 8	460564	G to A (CTAAAGTGGGT)	None (-136 intron)	16/16	18/18	18/18	18/18	20/20		2%		4%
Exon 8	460929	A to G (GCCACAGTCTG)	Silent (Thr-Thr)	16/20	17/20	16/20	16/20	14/20		76/96		83/96
Exon 8				80%	15%	80%	80%	70%		80%		86%

FIGURE 2b, sheet 2 of 3

100/139

SNP Position	Reference Sequence & SNP Position #	Nucleotide Change	AA Change	Coriell Frequencies					Liverpool Frequencies	
				N.Eur	Chi	In-Pk	AF/Am	SW-NA	Blood	Tumor
Exon 8	461199	T to C (GAGGATTC CCG)	None (3'-UTR)	0/18	0/18	0/20	0/18	0/20	1/88	1/94
Exon 8	461231	A to G (AGICTATGGGT)	None (3'-UTR)	0/18	0/18	0/20	0/18	0/20	1/90	1/94
Exon 8	461337	A to C (CTAAGAATAAG)	None (3'-UTR)	0/18	0/18	0/20	3/18	0/20	0/90	0/94
Exon 8	461520	G to C (ATTCCGCCTAT)	None (3'-UTR)	0/20	0/20	0/20	0/20	0/20	3/92	3/96
Exon 8	461843	G to A CCGGCGTGIGT	None (3'-UTR)	0/20	0/20	0/20	0/20	0/20	1/90	1/96
Exon 8	461968	T to C (AGTACTTGTC)	None (3'-UTR)	9/20	8/20	13/20	11/20	7/20	43/89	46/94
Exon 8	462125	C to T (GGTGGCCCTGGG)	None (3'-UTR)	0/20	0/20	0/20	2/20	0/20	0/92	0/94
Exon 8 *	462398	G to A (CTACCGCCTCC)	None (3'-UTR)	0/20	0/20	0/20	1/20	0/20	0/84	0/94
Exon 8	462683	C to A (TCATTCATTTC)	None (3'-UTR)	0/20	2/20	1/20	1/20	7/20	3/92	5/96
Exon 8	462949	T to G (TGTTCTGGATT)	None (3'-UTR)	0/20	0/20	0/20	1/20	1/20	0/82	0/96
Exon 8	463958	T to C (TTGCCCTAGCTT)	None (3'-UTR)	2/20	0/20	0/20	0/20	0/20	5/80	4/90
Exon 8	463966	C to T (CTTGCCCGTAAT)	None (3'-UTR)	0/20	0/20	0/18	0/16	0/20	1/82	1/90
Exon 8	464237	G to A (GCCTCGTTTTT)	None (3'-UTR)	0/20	0/20	0/20	0/20	0/20	2/90	2/94
Exon 8	464735	A to T (TATTCATTTTT)	None (3'-UTR)	2/20	2/20	1/20	0/20	8/20	9/90	4/96
Exon 8 *	465074	T to C GCCGATGCATA	None (3'-UTR)	0/20	1/20	0/20	0/20	0/20	0/84	0/94
Exon 8	AL078582 (54404)	A to G (ATCAAAAGTGGT)	None (3'-flanking)	3/20	2/18	3/20	1/14	0/20	20/78	23/88
Exon 8	AL078582 (54460)	C to A CTCACCTCACT	None (3'-flanking)	0/18	1/16	1/18	0/10	7/20	3/76	2/76

*, SNPs in Coriell Diversity panels. Seen only one time and may represent sequencing artifacts. They are not included in the total counts of SNPs.

FIGURE 2b, sheet 3 of 3

101/139

FIGURE 2c

PCR primers

Exon	Primer Position	PCR Product Length (bp)	Forward Primer	Reverse Primer
1A	ER1xAR-1	930	M13f-GCTCGTTCTCCAGGTAGTAGGGCA	M13r-GGGGCACATAAGGCAGCACA
1B	-161/ exon1B /+154	472	TGCAACCGCACACCCCATTTCTATCTG	GGGCTCCAACTTTAAGTACTGCTCTCC
1C	-227/ exon1C /+107	445	GGTTTCTCTCCCTCCCAAGTACAGCTTTC	AGAACAGCAATCCTCATCTCCCTGC
1D	-225/ exon1D /+123	444	TCTCAAAGGGAGTGGCCGAAATGC	TACTGTGCTACGCCGACCTTTCCTC
1E	-187/ exon1E /+163	472	AGCCAAACATTTGATTTCTCAGTGCC	AAGCAACGCATGTAGAGTGCCC
1F	-316/ exon 1F /+144	587	GCAAAATATCCTTGGAGCAGAAAGAC	TTTCCAACTCCACATGCCTGTC
1G	18711/ exon 1G / 19200	489	TTGGCCAAACATTTCCCTCA	TCCACAGCCTTGCTTGGT
2	-170/ exon2 /+240	600	ATAGGCAACACCTTTTGCTGCAACAG	ATTGAGTCTTGCCAAAGGAAGAGC
3	exon 3	483	CACCTCAAGAAAGACAGAAAAAGGCA	TTAGAAATTTCAGTTCCAGACACTTCCA
4	-156/ exon4 /+103	602	GCCACTTGTGTGAACACCTTACCG	CATGTGTAATTGCGTTCTTTTCCCCC
4?			GCCACTTGTGAAACACTTACC	CATGTTATTGCTTCTTTTCCCCC
5	-218/ exon5 /+194	553	TCTCTTCCCTTTCCCTTTTACGC	GGAAATGAGGACTCATTCAGGAC
6	-278/ exon6 /+94	502	CCATATTTAACATGGCAGACTTGAGGAC	GACATTATGCCCTTTGGAGTGGTAG
7	-195/ exon7 /+235	550	CAGAGCATCCCCATTGCTAGACTACTG	AAGCGTAAAGTATCGCTTCTCTATGCC
8	-76/ 501 exon8 /	577	TTCCCTTCTAGGGAATTTCAGCAC	TCCTCACGCTTAGTAACATAGCAAG
8.3	49579-51263	1684	AAAAATGAAAAACACACGGCCATGA	CCACGCTGGGAAATGAAGAAGA
8.17	52232-53728	1496	GCACTAATCCAGATGCCTATTGTTGG	GCCACACTTTAAATTCAATTGGAAAGG
8.18	53410-54908	1498	GAGATGGACTGTGGGTACTGGGAGT	AGGTAGCTCCAAAAAGGGAAGGGAGT
8.25	51167-52387	1220	AGCTACCTAGGAACATTCTTTCAGACC	TCCAACAATAGGCATCTGGATTAGTGCT

102/139

FIGURE 2d

Sequencing Primers (Unless indicated, PCR primers were used as sequencing primers)

Exon	Primer Name	
Exon 1A	M13f	TGTAAAAACGACGGCCAGT
Exon 1A	M13r	CAGGAAACAGCTATGACC
Exon 1A	ER1sq1Af2	CTCCAGCACCTTTGTAAAT
Exon 1G	ER1Gsf1 18720	CAGTATTGGCCAAACATTTTC
Exon 1G	ER1Gsr1 19198	TGGTATCACCTTTTGAGACA
Exon 8.3	E1.8 49979	AAAGTATTACATCACGGGGG
Exon 8.3	E1.8 50379	TGGAGAGTAGACATTTTGCC
Exon 8.3	E1.8 50806	AGGGATAAGTTCCTGATTTTGG
Exon 8.17	ER1x8.17sf1 52232	GCACATAATCCAGATGCCTAT
Exon 8.17	ER1x8.17sf2 52684	TTGGTATTGGGTGTAGGAAC
Exon 8.17	ER1x8.17sf3 53160	GGAAGTGCAGTCTTTTGATTT
Exon 8.17	ER1x8.17sr1 53702	AAATGCAGTTGGAAACAGAG
Exon 8.17	ER1x8.17sr2 53258	AAGTCCCTTAATTTGTTTCAGC
Exon 8.17	ER1x8.17sr3 52784	CCCCAGATAAATCACATCTT
Exon 8.18	ER1x8.18sf1 43410	GAGATGGACTGTGGGTACTG
Exon 8.18	ER1x8.18sf2 54033	GCCAGTTTCTGTTCTCTCAC
Exon 8.18	ER1x8.18sf3 54443	CTAAAGCCCTCTCTCACCTC
Exon 8.18	ER1x8.18sr1 54906	GTAGCTCCAAAAAGGGAAG
Exon 8.18	ER1x8.18sr2 54379	ACTGCTAGCAAGAAAGTGGAG
Exon 8.18	ER1x8.18sr3 54048	GAGAAACAGAAACTGGCATAA
Exon 8.25	ER1x8.25sf1 51173	CTAGGAAACATTCTCTTGACAG
Exon 8.25	ER1x8.25sf3 51929	CTGTTTGTTTAAAGAACACCT
Exon 8.25	ER1x8.25sr2 51945	GCTTCTTAAACAAACAGCAAC
Exon 8.25	ER1x8.25sr3 51565	TGGAATGAGCCTTTCTTTT
Exon 8.25	ER1x8.23r 52258	TCCAACAATAGGCATCTGGATTAGTGCT
Exon 8.25	ER1x8.25sf4 51860	CACTTAAATTTGGGGACAAT
Exon 8.25	ER1x8.25sr4 52072	GCAITGTTAACCCAGTCAAAT

103/139

(SEQ ID NO:2)

Figure 3: Amino Acid Sequence for the Estrogen Receptor Alpha

```
1  mtmtlhtkas gmallhqi qg neleplnrpq lkiplerplg evyldsskpa vynypegaay
61  efnaaaaaana qvygqtglpy gpgseaaaafg snglggfppl nsvsp splml lhpppq lspf
121 lqphgqqvpy ylenepsyt vreagppafy rpnsdnrrqg grerlastnd kgsmamesak
181 etrycavcnd yasgyhygvw scegckaffk rsiqghndym cpatnqctid knrrkscqac
241 rlrkcyevgm mkggirkdrr ggrmlkhkrq rddgegrgev gsagdmraan lwpsplmikr
301 skkns lalsl tadqmvsall daeppilyse ydptrpfsea smmglltnla drelvhminw
361 akrvp gfvdl tlhdqvhlle cawleilmig lvwrsmehpv kllfapnlll drnqgkcveg
421 mveifdmla tssrfrmmnl qgeefvclks iillnsgvyt flsstlksle ekdhihrvld
481 kitdtlihl akagltlqqq hqrlaqllli lshirhmsnk gmehlysmkc knvvp lydll
541 lemldahrlh aptsr ggasv eetdqshlat agstssshslq kyyitgeaeg fpatv
```

FIGURE 3

104/139

Haplotype analysis of Estrogen receptor alpha.

Liverpool samples are from 48 patients, and each patient had a tumor and blood sample typed. Coriell samples were controls, but they were not matched controls. Rather they included a mix of Europeans, Chinese, Indo-Pakistani, and African Americans.

TITLE: ESR1 data from Coriell controls

```
#1-4
CGCAGCACTCTCGCATNNNTGAACACAGTAACGTCGTTTCGTTACCGACCA
#2-12
CGTAGCACTCNCGCATTTCGCTGAGCACAGTAACGTCGTTTCGTTGNCGACCA
#3
AGTAGCACTCNCGCATTTCGCTGAGCACAGTAACGTCGTTTCGTTGNCGACCA
#4-4
CGTAGCACTCCCGCATTTCGGTGAGCACAGTAACGCCGCTTCGTTGCCGACCA
#5-3
CGTAGCACTCCCGCATTTCGGTGAGCACAGTAACGCCGCTTCGTTGCCGAGCA
#6-2
CGTAGCACTCCCGCATTTCGGTGAGCACAGTAACGTCGATTCGATGANGACCA
#7
CGTAGCACTCCCGCATTTCGGTGAGCACAAACGTCGATTCGATGANGACCA
#8-3
CGTAGCACGCNCGCATTTCGCTGAGCACAGTAACGTCGTTTCGTTGNCGANCA
#9
CGTAGGACGCTCGCATCCNNTGAGCACAGTAACGCCGCTTCGTTNNNNNNNN
#10-4
CGCAGCACTCNCGCATCCNNTGAGCACAGTAACGTCGTTTCGTTACCGACCA
#11
CGTAGCACTCNCGCATTTCNCTGACGCAGTAACGTCGTTTCGTTGCCGACCA
#12-2
CGTAGCANTCNCGCATCCGCTTAACGCAGTAACGCCGCTTCGTTGNNGAGCA
#13
CGCAGCACGCCCGCATTTCGGTGAACACAGTAACGCCGATTCGATGACGAGCA
#14
CGTAGCACTCCCGCATTTCNNTGAACACAATACGCCGCTTCGTTGNCGAGCA
#15
CGTAGCACTCCNNCATTTCNCTGAGCACAGTAACGTCGAGTCGATGCCGAGCG
#16
CGTAGCANNCCGCATTTCGCTGAGCACAAACGCCGATTCGATGANGACCA
#17
CGTAGGACTCCCGCATTTCGCTGAGCACAGTAACGTCGATTCGATGANGAGCA
#18
CGTAGCACTCCCGCATCCNNTGAGCACAAACGCCGATTCGATGANGANN
#19-8
CGTAGCACTCNCGCATNNNNNNNNNNCAATAACGCCGCTTCGTTGCNNNNNN
#20-6
CGCAGCACGCNCGCATNNNNNNNNNNCAGTAACGCCGCTTCGTTGCNNNNNN
#21
CGTAGCACTCNCGCATCCNNTTAGCGCAATAACGCCGCTTCGTTGCNGGCCA
#22
CGCAGCACTCCCGCATTTCGCTTGGCGNNGNNNCGCCGCTTCGTTGCCGACCA
#23
CGCAGCACGCCCGCATCCNNTGAACATAATAACGCCGCTTCGTTGCCGAGCA
#24
CGCAGCACGCCCGTATTTCNNTGAGCACAAACGCCGCTTCGTTGNCGAGCA
#25
CGCAGCANNCCGCATCCNNTGAACACAGTAACGCCGCTTCGTTGCCGAGCA
#26
CGCAGCACGCTCGCATCCNNTGAGCACAGTAACGTCGTTTCGATGANGANN
#27
CGCAGCACTCCNNCATTTCNNTAACGCAGTACCGTTGCTTNGTTNNCGAGCN
#28
CGCACCCTCCCGCATTTCNCTTACGCAGTACCGTCAATTNGTTGCCGAGCA
#29
```

105/139

CGCACCACGCCCCGCATCCGCTGAACACAGTAACGTCGCTTCGTTNNNNNNNN
#30
CGTAGCACTCTCGCATCTGCTNAGCGCAGTAACGTCGCTTCGTTGCCGACCA
#31
CGCAGCACTCCCGCATNCNNTGAGCACAGTAACGCCGCTTCGTTGCCGAGCA
#32
CGCAGCACTCCCGCATTCGCTGAGCACAAATAACGCCGCTTCGTTGCCGACCA
#33
CGCACCANNCCGCATCCGCTGAGCANNGNNGTCGCTTCGTTGCCGAGCA
#34-2
CGCAGCACTCTCGCATCCGCTGAGCACAGTAACGCCGCTTCGTTGCCGAGCA
#35
CGTAGCACTCCCGCATCCNNTTGGCGCAGTAACGTCGATTGACGACGAGCA
#36-3
CGTAGCACTCCCGCATTCGCTGAACACAGTAACGCCGCTTCGTTGNCGACCA
#37
CGCAGCAGCCCCGCATTCTGCTGAACACAGTAACGCCGCTTCGTTGCCGACCA
#38
CGCAGCAGCCCCGCATTCTGCTGAACACAATAACGCCGCTTCGTTGCNNNNNN
#39
CGCAGGACGCCCCGCATTGCTGAGCACAGTAACGCCGCTTCGTTGCNAAGCA
#40
CGCAGCACTCCCGCATTCNNTGAACACAATAACGTCGCTTCGTTACCGAGCA
#41
CGCAGCACTCNCGCATTGCTGAACACAGTAACGTCGCTTCGTTGCNGAGCA
#42
CGCAGCACTCCCGCATTCNNTNGGCGCAATAACGTCGCTTNGTTGCCGACCA
#43
NNNNNGACTCCTGCATTGCTTGGCGNNGNNGTCGTTGCTTCGTTNCGAGCA
#44
CGTAGCACTCNCGCATTCTTAGCGCAGTAACGTCGCTTCGTTGCCGGCTA
#45
CGCAGCACTCCCTCATTCNNTGAGCACAGTAACGCCGCTTCGTTGCCGACCA
#46
CGCAGCACTCTCGCATTCGCTGAACACAGTAACGTCGCTTCGTTGCCGAGCA
#47
CGTAGCACTCCCGCATTCGCTGAGCACAGTAACGCCGCTTCGTTGCCGAGCA
#48
CGCAGCACTCCCGCATTCGGTGAGCACNGTAACGTCGATTGATGACGACCA
#49
CGCAGCAGCCCCGCATTGGTGAGCACNGTAACGTCGCTTCGTTACCGACCA
#50
CGCAGCACTCCCGCATCCNNTGAGCANNGTAAAGTCGCTTCGTTGCCGACCA
#51
CGCAGCACTCCCGCATCCNNTGAGCANNGTAAAGTCGCTTCGTTGCCGAGCA
#52
CGCAGGACGCCNNCATTCGCTGAGCACAGTAACGCCGCTTCGTTGCCGACCA
#53
CGCAGGACGCCNNCATTCGCTGAGCACAAATAACGTCGCTTCGTTGCCGAGCA

106/139

TITLE: ESR1LVR data - tumors in Liverpool

#1-6
CGCAGCACTCTCGCATCCGCTGAACATGGTAACGCCGCTTCGTTGC
#2-7
CGCAGCACTCTCGCATCCGCTGAACACGGTAACGTCGCTTCGTTGC
#3-31
CGTAGCACTCCCGCATCCGCTGAGCACGGTAACGTCGCTTCGTNNN
#4-7
CGCAGCACTCTCGCATCCGCTGAACACGGTAACGTCGCTTCGTTAC
#5-2
CGCAGCACTCTNNCATTTCGGTGAGCACGGTAACGTCGCTTCGTTGC
#6
CGCAGCACTCTNNCATTTCGGTGAGGACGGTAACGTCGCTTCGTTGC
#7-2
CGCAGCACTCTCGCATTCGCTGAACACGGTAACGTCGATTTCGTTGC
#8
CGCAGCACTCTCGCATTCGCTGAACACGGTAACGTCGATTTCGTTAC
#9-5
NGTAGCACTCTCGCATCCGCTGAACANNNGAACNNNNNNNNNNNNNN
#10-2
NNCAGCACTCCCGCATTCGGTGAGCACGATAACGCCGCTTCGTTGC
#11
NNTANCACTCTNNCATCCGCTGAGCANNATAACGTCGCTTCGTTNN
#12-5
CGTAGCACTCTCGCATCCGCTGAGCANNGTAAACGNCGCTNNNNNNNN
#13
CGCAGCACTCCCGCATTCGCTGAGCACGACAAGGCCGCTTCGTTGC
#14-3
CGTAGCACTCTCGCATCCGCTGAGCACGATAACGCCGCTTCGTTGC
#15
CGCAGCACTCCNNCATTTCGCTGAGCACGACAAGGCCGCTTCGTTGC
#16
CGTAGCACTCCCGCATCCGCTGAACACGGTAACGCCGCTTCGTTAC
#17
CGCAGCAGCTCTCGCACTCGCTGAACACGGTAACGCCGCTCCGATGC
#18
CGCAGCACTCTNNCATTTCAGTTGGCGCGGTAACGCCGATTTCGATGA
#19
CGCACCAGCCCCGCATTTCGCTGAAGACGGTAACGCCGCTTCGTTAC
#20-7
CGCAGCACTCCCGCATCCGCTGAGCACGGTAACGTCGCTTCGTTAC
#21
CGTAGCACTCCCGCATTCGCTTGGCGCGANNNCGCCGCTTCGTTGC
#22
NNNANCACTCTCGCATCCGCGAGACGCGTAACGTCGATNNGATAA
#23
CGTAGCACTCTCGCATCCGCTGAGCACGATAACGCCGCTCCGTTGC
#24-2
CGTAGCACTCCNNCATTTCGCTGAACACGATAACGNCGCTTCGTTAN
#25
CGCAGCACTCTCGCATCCGCTGAGCACGATAACGCCNCTCCGATGC
#26
CGCAGCACTCCCGCATTCGGTGAGCACGGTAACGTCGATTTCGTTAC
#27
CGCAGCACTCCCGCATCCGCTGAACATGGTGACGCCGCTTCGTTAN
#28-5
CGCAGCACTCCCGCATTCGCTGAACACGGTAACGTCGCTTCGTNN
#29
CGCAGCACTCTCGCATTCGGTGAAACACGGTAACGTCGCTTCGTTAC
#30
CGCAGCACTCTCGCATTCAGTTGGCGCGGTAACGCCNCNTTCGATGA
#31
NNNNNCAGCCCCGCATTTCGCTGAAGACGGTAACGCCGCTTCGTTAC
#32
CGCAGCACTCCCGCATTCGGTTGGCGCGGTAACGTCGCTCCGATAC

FIGURE 4a, sheet 3 of 6

107/139

#33
CGTAGCACTCCCGCATTTCGCTTGGCGCGATAACGCCGCTTCGTTGC
#34
NNNAGCACTCTNNCATTTCGCTGAGCANNNNNNNCGATNNGTNNN
#35
CGTAGCACTCTCGCATCCGCTGAGCACGATAACGCCGCTCCGATGC
#36
CGTAGCACTCCCGCATTTCGCTGAACACGATAACGCCGCTTCGTTAC
#37
CGCAGCACTCTCGCATCCGGTGAGCACGATAACGTCGCTCCGATGC
#38
CGCAGCACTCCCGCATTTCGGTGAGCACGGTAACGTCGATTCGATAA
#39
CGCAGCACTCCCGCATCCGCTGAACATGGTGACGCCGCTTCGTTGC
#40
CGTACCACGCCCGCATCCGCTGAGCACGATAACGCCNCGTNNN
#41
CGCAGCACTCCCGCATTTCGCTGAACACGGTAACGTCGCTTCGTTAC
#42
CGTAGCACGCTCGCATCCGCTGAGCACGATAACGCCGCTTCGTTGC
#43
CGTAGCACTCTCGCATCCGCTGAGCACGGTAACGTCGCTTCGTTAC
#44
CGTAGCACTCCCGCATTTCGGTGAGGACGATAACGCCGCTTCGTTGC
#45-2
CGTAGCACTCCCGCATTTCGCTGAACACGGTAACGTCGCTTCGATAA
#46-5
CGCAGCACTCCCGCATCCGCTGAACACGGTAACGCCGCTTCGTTGN
#47-3
CGTAGCACTCCCGCATCCGCTGAACACGATAACGCCGCTTCGTTGC
#48
CGCACCACGCCCGCATTTCGCTGAGCACGGTAACGCCGCTTCGTTGC
#49
CGTAGCACTCCCGCATCCGCTGAGCACGATAACGCCGCTTCGTTGC
#50-3
NNNNNCACTCCCGCATTTCGCTGAGCANNGTAAACGCCGCTNNGTNNN
#51
CGCAGCACTCCNNCATTTCGGTGAGCACGGTAAGGCCGCTTCGTTGC
#52
CGCACCACGCCCGCATCCGCTGAGCACGGTAACACCGCTNNGTTGN
#53-5
CGCACCACGCCCGCATCCGCTGAGCANNGTAAACGCCGCTTCGTTNN
#54
CGCAGCACTCCNNCATTTCGGTGAGCACGGTAAGGCCGCTTCGTTNN
#55
CGTAGCACTCCCGCATTTCGCTGAACACGATAACGCCGCTNNGTTGC
#56
CGCACCACGCCCGCATCCGCTGAGCACGATAACGCCGCTTCGTTGC
#57-2
CGCACCACGCTNNCATCCNNTGAGCACGGTAACGTCGCTTCGTTGC
#58
CGCACCACGCTCGCATCCGCTGAGCACGGTAACGTCGCTTCGTTGC
#59
CGCAGCACTCTCTCATTCGCTGAGCANNATAACACCGCTTCGTTGC
#60
CGCAGCACGGTCGCATTTCGCTGAGCACAAATAACGCCGCTTCGTTGC
#61-3
NGTAGCACTCCNNCATTTCGGTTGGCGGNNGTAAACGCCGCTTCGTTNN
#62
CGCAGCACGGTNNCATTTCGCTGAGCACGATAACGCCGCTTCGTTGC
#63
CGTAGCACTCCNNCATTTCGGTTGGCGGNNNCGCCGCTTCGTTAC
#64
CGTAGCACTCTNNCATTTCGCTGGGCGCGGTAACGTCNCTNNGTTNN
#65

108/139

CGTAGCACTCCCGCATTTGCTGAGCACGGTAACGCNGCTCCGATGC
#66
CGCACCAGGCTCGCATTCGCTTAGCGCGGTAACGCCGCTTCGTTGC
#67
CGTAGCACTCCCGCATTTGGTGAGCACGGTAACGCCGCTCCGATGC
#68
CGCACCAGGCTCGCATTCGCTTAGCGCGGTAACGCCGCTTCGTTAC
#69
CGTAGCACTCCCGCATTCGCTGAGCACGATAACGCCGCTTCGTTGC
#70
CGTAGCACGCCNNCATTCGCTGAGCACGGTAACGCCGCTTCGTTGC
#71
CGTAGCACTCCCGCATCTGGTGAGCACGGTAACGCCGCTTCGTTGC
#72
CGTAGCACTCCCGCATTCGGTGAGCACGATAACGCCGCTTCGTTGN
#73-2
CGCGCCAGGCTCGCATCCGCTTAACGCCGTAACGTCGCTTCGTTAC
#74
CGCACCACGCCNNCATCCGCTGAGCACGATAACGTCGCTTCATTGN
#75
CGCACCACGCCCCGCATCCGCTGAGCACGATAACGTCGCTTCATTGC
#76-2
CGCAGCACGCCCCGCATCCGCTGAGCACGGTAACGTCGCTTCATTGC
#77-2
CGCAGCACTCCCGCATTCGCTTGGCGCGGTAACGTCGCTTTGTTAC
#78
CGCAGCACGCTCGCATCCGCTGAGCACGGTAACGTCNCTTCGTTGC
#79
CGCAGCACTCTCGCATCCGCTGAGCACGGTAACGTCGCTNNGTTGC
#80
CGCAGCACTCTCGCATCCGCTGAGCACGGTAAGGCCGCTNNGTTAC
#81
CGCAGCACTCTCGCATCCGCTGAGCACGGTAACGTCGCTTCGTTGC
#82
CGCAGCACTCTCGCATCCGCTGAGCACGGTAAGGCCGCTTCGTTAC
#83
CGTAGCACTCCCGCATTCGCTGAGCACGGTAACGTCGCTTCGTTGC
#84
CGTAGCACTCTCGCATTCGCTGAACACGGTAACGTCGCTCCGTTAC
#85
CGTAGCACTCCCGCATCCGCTGGGCACGGTAACGTCGCTTCGTTGC
#86
CGTAGCACTCCCGCATTCGGTTGGCGCGGTAACGTCGCTTCGTTAC
#87
CGTAGCACTCCNNCATCCGCTGGGCACGGTAACGTCGCTTCGTTGC
#88
CGCAGCACTCCNNCATTCGGTTGGCGCGGTAACGTCGCTTCGTTAC
#89
CGCAGCACTCCCGCATTCGGTGAGCACGGTAACGCCGCTTCGTTGC
#90
CTTAGCACTCCCGCATTCGGTGAGCACGGTAACGCCGCTTCGTTGC
#91
CGCAGCACTCCCGCATTCGGTGAGCACGGTAACGCCGCTTCGTTGC
#92
CTTAGCACTCCCGCATTCGGTGAGCACGGTAACGCCGCTTCGTTGC
#93
CGTAGCACTCCCGCATTCGCTTGGCGCGGTAACGCCGCTTCGTTGC
#94
CGCAGGGCGCCCCGCATTCGCTTAGCGCGGTAACGCCGCTTCGTTGC
#95
CGTAGCACTCCNNCATTCGCTTGGCGCGGTAACGCCGCTTCGTTGN
#96
CGCAGGGCGCCNNCATTCGCTTAGCGCGGTAACGCCGCTTCGTTGN
#97
CGTAGCACTCCNNCATTCGGTGAGCACGGTAACGCCGCTTCGTTGC

109/139

#98

CGTAGCACTCTNNCATTGTTGGTGAGCACGGTAACGCCGCTTCGTTGC

#99

CGTAGCACTCCCGCATTTCGGTGAGCACGGTAACGCCGCTTCGTTGC

#100

CGTAGCACTCTCTCATTGTTGGTGAGCACGGTAACGCCGCTTCGTTGC

#101

CGTAGCACTCCNNCATTTCGGTTGGCGCGGTAACGTCGCTTCGTTAC

#102

CGCAGCACGCCNNCATCCGCTTGGCACGGTAACGTCGCTTCGTTAC

110/139

The non-singleton haplotype data were fitted to a neighbor-joining tree (L is Liverpool sample):

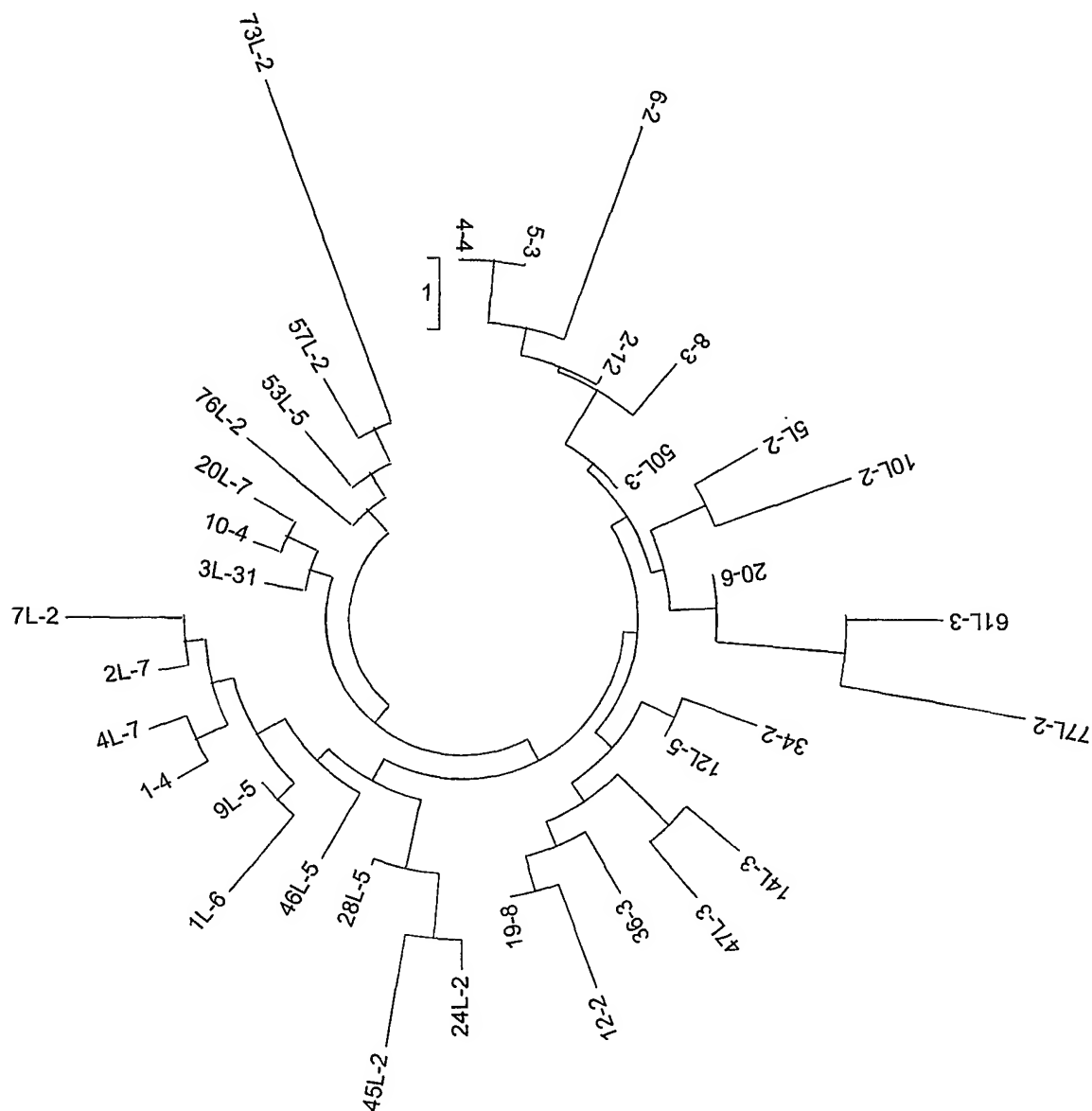


FIGURE 4b

111/139

A reconstructed haplotypes cladogram which indicated a subset of SNPs in ER1 that preserve the property of having clades highly enriched in the tumor samples or the control.

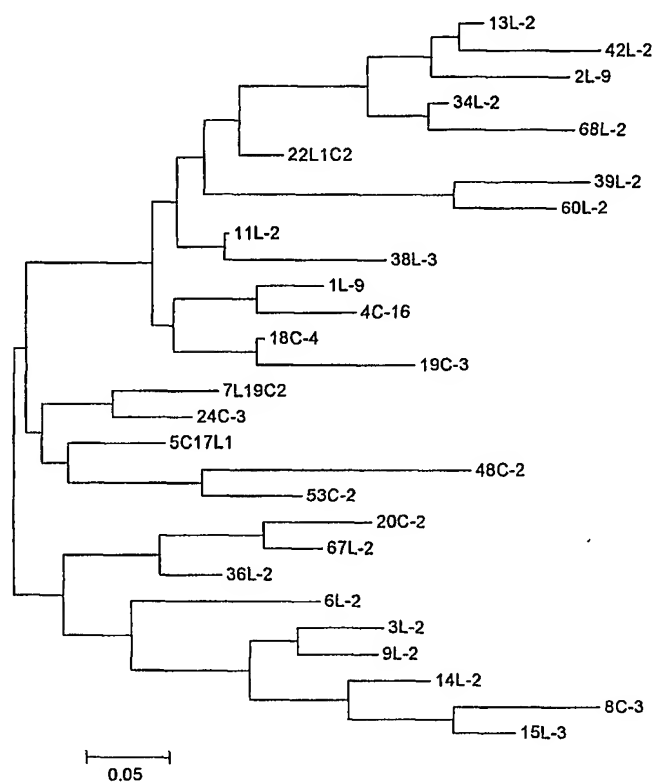
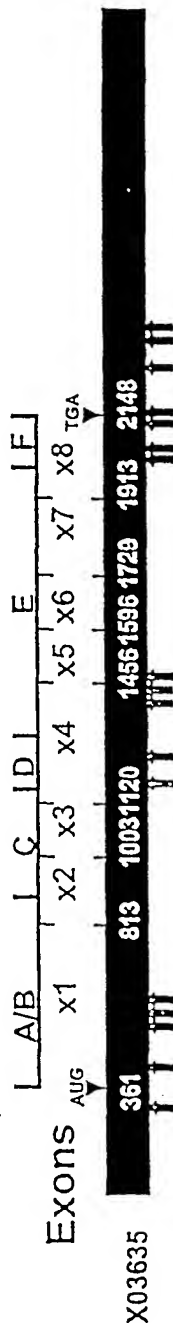
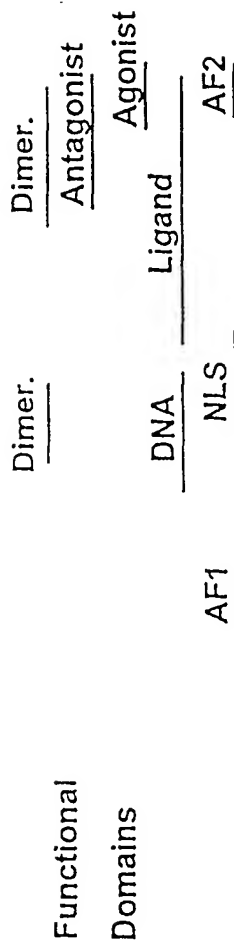


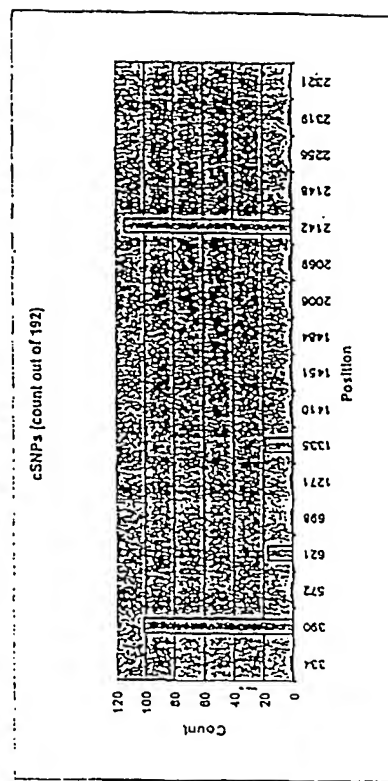
FIGURE 4c

FIGURE 5

cSNP candidates



Candidate cSNPs



113/139

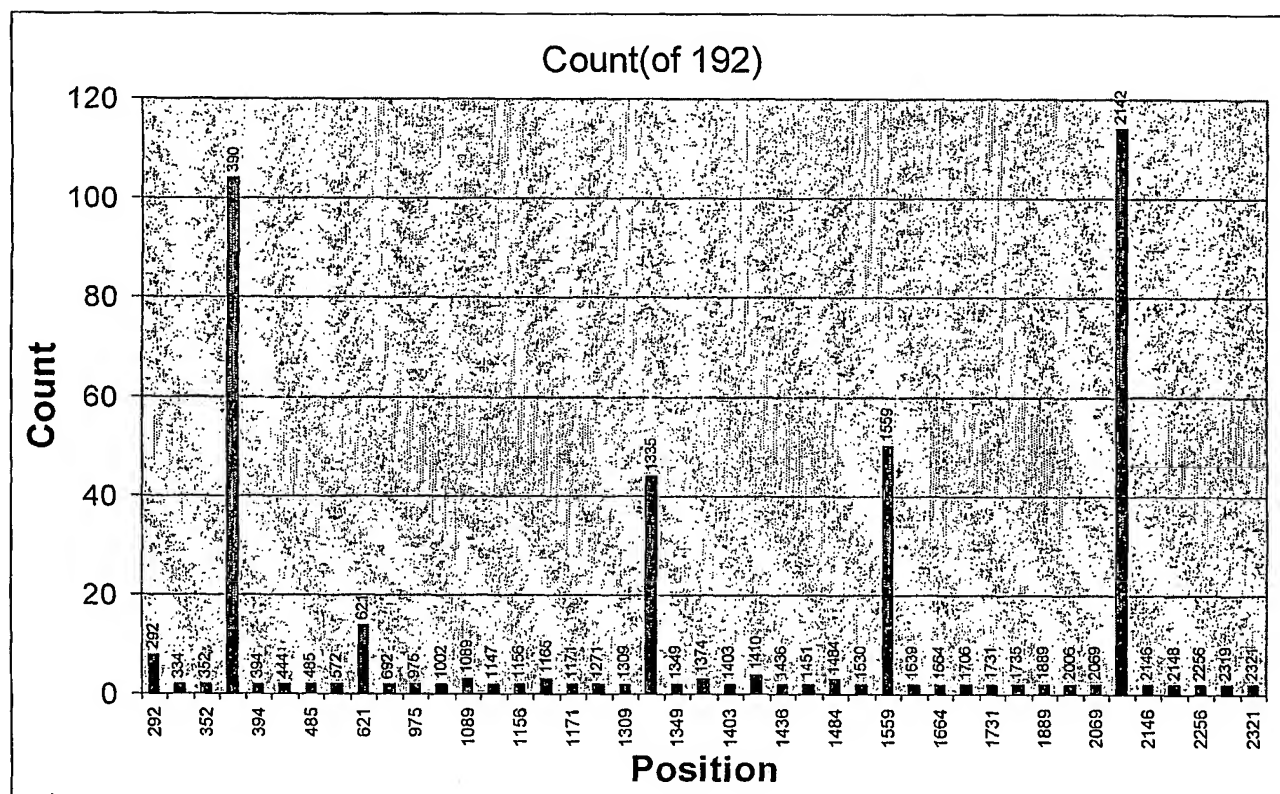
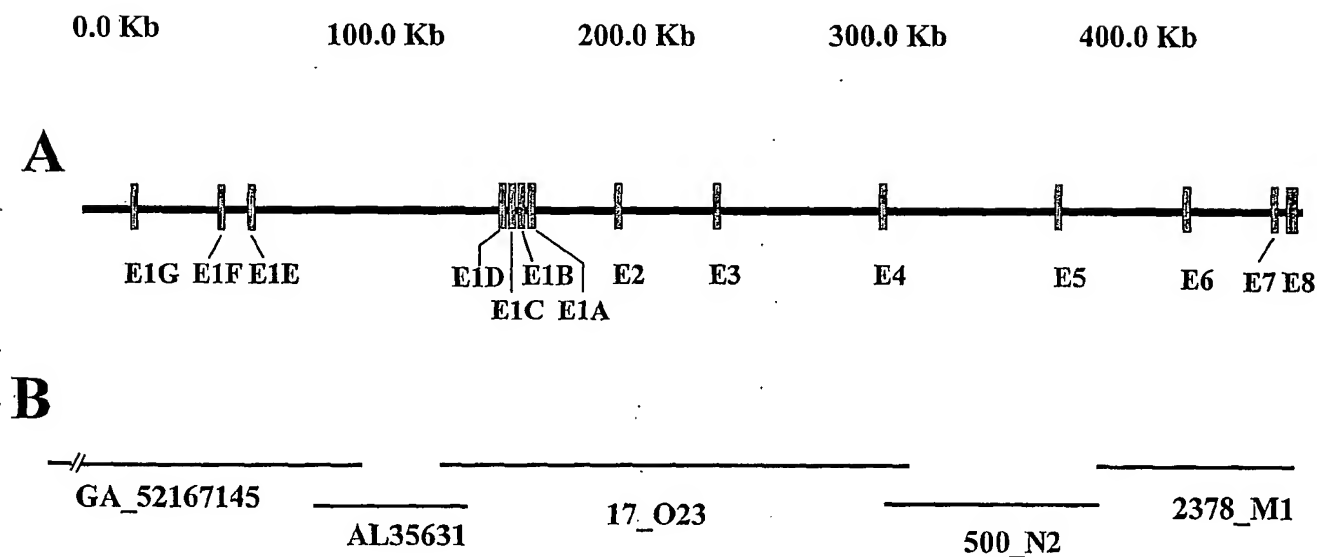


FIGURE 6

114/139

Estrogen Receptor Alpha



(A) Complete structure of the human estrogen receptor alpha (ER α). Exons are represented by filled boxes and introns by horizontal lines. (B) Order and names of contigs used to complete the genomic sequence. GA numbers represent Celera contig numbers. Research genetics BAC clones are represented by standard plate and well numbering.

FIGURE 7

115/139

		1A 170035		1A 170068		1A 170256		1A 170368		1A 170487		1B 169812		1B 169823		1C 167950	
		C	A	G	T	C	T	A	G	G	C	C	G	A	G	C	G
total	total	0.99	0.01	1	0	0.46	0.54	1	0	0.96	0.04	0.94	0.06	1	0	1	0
N. Eur	N. Eur	1	0	1	0	0.55	0.45	1	0	0.9	0.1	1	0	1	0	1	0
a01	GM03715	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a02	GM06816	2	0	2	0	1	1	2	0	1	1	2	0	2	0	n/a	n/a
a03	GM10923	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
a04	GM10924	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a05	GM11814	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a06	GM12136	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
a07	GM12137	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
a08	GM12547	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
a09	GM12548	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
a10	GM14667	2	0	2	0	0	2	2	0	2	0	2	0	2	0	n/a	n/a
Chi	Chi	0.95	0.05	1	0	0.5	0.5	1	0	0.95	0.05	1	0	1	0	1	0
b01	GM00576	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b02	GM03433	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b03	GM06090	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
b04	GM07426	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
b05	GM09820	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
b06	GM11321	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
b07	GM11322	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b08	GM11323	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
b09	GM11324	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0
b10	GM11325	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
In. Pak	In. Pak	1	0	1	0	0.5	0.5	1	0	1	0	1	0	1	0	1	0
c01	GM01032	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
c02	GM01225	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
c03	GM04300	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
c04	GM07895	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
c05	GM10176	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
c06	GM10666	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
c07	GM10667	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
c08	GM11213	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
c09	GM11860	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c10	GM14611	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
Af. Amer	Af. Amer	1	0	1	0	0.5	0.5	1	0	0.94	0.06	0.9	0.1	1	0	1	0
d01	GM14660	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1	1	2	0	2	0
d02	GM14661	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
d03	GM14663	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
d04	GM14665	2	0	2	0	1	1	2	0	2	0	1	1	2	0	2	0
d05	GM14672	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
d06	GM14682	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
d07	GM14683	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
d08	GM14696	2	0	2	0	1	1	2	0	1	1	2	0	2	0	2	0
d09	GM14698	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
d10	GM14700	2	0	2	0	1	1	2	0	2	0	2	0	2	0	n/a	n/a
SW Amer. Ind	SW Amer. Ind	1	0	1	0	0.25	0.75	1	0	1	0	0.8	0.2	1	0	1	0
e01	GM12060	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
e02	GM12061	2	0	2	0	1	1	2	0	2	0	1	1	2	0	2	0
e03	GM12062	2	0	2	0	0	2	2	0	2	0	2	0	2	0	n/a	n/a
e04	GM12063	2	0	2	0	0	2	2	0	2	0	1	1	2	0	2	0
e05	GM12064	2	0	2	0	2	0	2	0	2	0	0	2	2	0	2	0
e06	GM14308	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
e07	GM14309	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
e08	GM12310	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
e09	GM14311	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
e10	GM14313	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0

FIGURE 8a, sheet 1 of 6

116/139

	1C 167989		1C 168054		1E 64331		1F 52901		1F 52877		1G 18783		1G 18937		1G 19034		Intron 3 243187	
	T	G	C	G	T	C	C	T	G	T	C	T	A	C	T	C	C	T
total	0.76	0.24	1	0	0.2	0.8	0.99	0.01	0.99	0.01	0.99	0.01	0.99	0.01	1	0	0.33	0.674
N. Eur	0.94	0.06	1	0	0.45	0.55	1	0	0.95	0.05	1	0	1	0	1	0	0.67	0.333
a01	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	n/a	n/a
a02	n/a	n/a	n/a	n/a	0	2	2	0	2	0	2	0	2	0	2	0	2	0
a03	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a04	2	0	2	0	1	1	2	0	1	1	2	0	2	0	2	0	1	1
a05	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
a06	2	0	2	0	n/a	1	2	0	2	0	2	0	2	0	2	0	1	1
a07	2	0	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	0	2
a08	1	1	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0
a09	2	0	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	1	1
a10	2	0	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	1	1
Chi	0.75	0.25	1	0	0	1	1	0	1	0	1	0	0.95	0.05	1	0	0.3	0.7
b01	1	1	2	0	0	2	2	0	2	0	2	0	1	1	2	0	0	2
b02	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
b03	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
b04	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
b05	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
b06	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
b07	1	1	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	0	2
b08	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
b09	2	0	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	0	2
b10	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
In. Pak	0.75	0.25	1	0	0.28	0.72	1	0	1	0	1	0	1	0	1	0	0.25	0.75
c01	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
c02	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	1	1
c03	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
c04	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
c05	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
c06	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c07	1	1	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	1	1
c08	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0	1	1
c09	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
c10	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
Af. Amer	0.61	0.39	1	0	0.22	0.78	0.94	0.06	1	0	0.95	0.05	1	0	1	0	0.28	0.722
d01	1	1	2	0	0	2	1	1	2	0	2	0	2	0	2	0	1	1
d02	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	n/a	n/a
d03	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
d04	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
d05	1	1	2	0	0	2	2	0	2	0	1	1	2	0	2	0	0	2
d06	1	1	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	1	1
d07	1	1	2	0	0	2	n/a	n/a	n/a	n/a	2	0	2	0	2	0	0	2
d08	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
d09	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
d10	n/a	n/a	n/a	n/a	0	2	2	0	2	0	2	0	2	0	2	0	1	1
SW Amer. Ind	0.72	0.28	1	0	0.13	0.88	1	0	1	0	1	0	1	0	1	0	0.13	0.875
e01	2	0	2	0	0	2	n/a	n/a	n/a	n/a	2	0	2	0	2	0	0	2
e02	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
e03	n/a	n/a	n/a	n/a	0	2	2	0	2	0	2	0	2	0	2	0	0	2
e04	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
e05	0	2	2	0	0	2	n/a	n/a	n/a	n/a	2	0	2	0	2	0	0	2
e06	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	1	1
e07	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0	1	1
e08	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
e09	2	0	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	n/a	n/a
e10	1	1	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	n/a	n/a

FIGURE 8a, sheet 2 of 6

117/139

	Exon 3 243055		Exon 4 306292		Exon 4 306382		Exon 6 423067		intron 6 423149		Intron 6 423163		Intron 6 423220		Intron 6 423232		Intron 6 423258	
	C	T	G	O	C	G	T	C	G	T	A	G	G	A	C	G	A	G
total	0.98	0.02	1	0	0.83	0.17	0.99	0.01	0.81	0.19	0.88	0.13	0.75	0.25	1	0	0.8	0.2
N. Eur	1	0	1	0	1	0	0.95	0.05	0.85	0.15	0.95	0.05	0.8	0.2	1	0	0.85	0.15
a01	n/a	n/a	n/a	n/a	n/a	n/a	2	0	2	0	2	0	0	2	2	0	2	0
a02	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a03	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a04	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0
a05	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0
a06	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0
a07	2	0	n/a	n/a	n/a	n/a	1	1	1	1	1	1	1	1	2	0	1	1
a08	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a09	2	0	n/a	n/a	n/a	n/a	2	0	1	1	2	0	2	0	2	0	1	1
a10	2	0	2	0	2	0	2	0	1	1	2	0	1	1	2	0	1	1
Chi	1	0	1	0	0.75	0.25	1	0	0.65	0.35	0.7	0.3	0.75	0.25	1	0	0.65	0.35
b01	2	0	2	0	0	2	2	0	0	2	0	2	0	2	0	2	0	2
b02	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	1	1	2	0	2	0
b03	2	0	2	0	1	1	2	0	2	0	2	0	1	1	2	0	2	0
b04	2	0	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
b05	2	0	n/a	n/a	n/a	n/a	2	0	0	2	0	2	0	2	0	2	0	2
b06	2	0	n/a	n/a	2	0	2	0	0	2	1	1	2	0	2	0	0	2
b07	2	0	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
b08	2	0	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
b09	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b10	2	0	2	0	1	1	2	0	1	1	1	1	2	0	2	0	1	1
In. Pak	0.9	0.1	1	0	0.75	0.25	1	0	0.89	0.11	0.9	0.1	0.6	0.4	1	0	0.85	0.15
c01	2	0	2	0	2	0	2	0	2	0	2	0	0	2	2	0	2	0
c02	2	0	2	0	2	0	2	0	1	1	2	0	1	1	2	0	1	1
c03	2	0	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
c04	2	0	n/a	n/a	2	0	2	0	2	0	2	0	0	2	2	0	2	0
c05	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
c06	1	1	2	0	2	0	2	0	n/a	1	2	0	2	0	2	0	1	1
c07	2	0	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
c08	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	1	1	2	0	2	0
c09	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
c10	2	0	n/a	n/a	n/a	n/a	2	0	1	n/a	0	2	2	0	2	0	1	1
Af. Amer	1	0	1	0	1	0	1	0	0.7	0.3	0.85	0.15	0.65	0.35	1	0	0.7	0.3
d01	2	0	2	0	2	0	2	0	0	2	0	2	0	2	0	2	0	2
d02	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0
d03	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	1	1	2	0	2	0
d04	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	1	1	2	0	2	0
d05	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0
d06	2	0	n/a	n/a	2	0	2	0	0	2	2	0	2	0	2	0	0	2
d07	2	0	n/a	n/a	n/a	n/a	2	0	1	1	2	0	1	1	2	0	1	1
d08	2	0	n/a	n/a	2	0	2	0	1	1	1	1	1	1	2	0	1	1
d09	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	0	2	2	0	2	0
d10	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	1	1	2	0	2	0
SW Amer. Ind	1	0	1	0	0.85	0.15	1	0	1	0	1	0	1	0	1	0	1	0
e01	2	0	1	n/a	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e02	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e03	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e04	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e05	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e06	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0
e07	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0
e08	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
e09	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
e10	n/a	n/a	1	n/a	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

FIGURE 8a, sheet 3 of 6

118/139

	8 208		8 220		Exon 8 460929		Exon 8 461199		Exon 8 461231		Exon 8 461337		Exon 8 461520		Exon 8 461843		Exon 8 461968	
	C	T	A	G	G	A	T	C	A	G	A	C	C	G	G	A	T	C
total	0.99	0.01	1	0	0.79	0.21	1	0	1	0	0.97	0.03	1	0	1	0	0.53	0.47
N. Eur	1	0	1	0	0.8	0.2	1	0	1	0	1	0	1	0	1	0	0.55	0.45
a01	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a02	n/a	n/a	n/a	n/a	1	1	n/a	n/a	n/a	n/a	n/a	n/a	2	0	2	0	1	1
a03	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
a04	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
a05	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0	1	1
a06	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a07	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a08	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
a09	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
a10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
Chi	1	0	1	0	0.85	0.15	1	0	1	0	1	0	1	0	1	0	0.6	0.4
b01	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b02	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	1	1
b03	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
b04	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b05	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	1	1
b06	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b07	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
b08	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
b09	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b10	n/a	n/a	n/a	n/a	2	0	n/a	n/a	n/a	n/a	n/a	n/a	2	0	2	0	0	2
In. Pak	0.95	0.05	1	0	0.8	0.2	1	0	1	0	1	0	1	0	1	0	0.4	0.6
c01	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
c02	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
c03	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
c04	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
c05	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
c06	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c07	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c08	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
c09	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c10	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	1	1
Af. Amer	1	0	1	0	0.8	0.2	1	0	1	0	0.83	0.17	1	0	1	0	0.45	0.55
d01	n/a	n/a	n/a	n/a	2	0	n/a	n/a	n/a	n/a	n/a	n/a	2	0	2	0	1	1
d02	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
d03	2	0	2	0	1	1	2	0	2	0	1	1	2	0	2	0	1	1
d04	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
d05	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
d06	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
d07	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
d08	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
d09	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0	0	2
d10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
SW Amer. Ind	1	0	1	0	0.7	0.3	1	0	1	0	1	0	1	0	1	0	0.65	0.35
e01	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e02	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	0	2
e03	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	1	1
e04	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e05	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	1	1
e06	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	1	1
e07	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e08	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
e09	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0	1	1
e10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1

FIGURE 8a, sheet 4 of 6

119/139

	Exon 8 462125		8 462398		8 462683		8 462949		8 463958		8 463966		8 464237		8 464735		8 465074	
	C	T	G	A	C	A	T	G	T	C	C	T	G	A	T	A	T	C
total	0.98	0.02	0.99	0.01	0.89	0.11	0.98	0.02	0.98	0.02	1	0	1	0	0.87	0.13	0.99	0.01
N. Eur	1	0	1	0	1	0	1	0	0.9	0.1	1	0	1	0	0.9	0.1	1	0
a01	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a02	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a03	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a04	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a05	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a06	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a07	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a08	2	0	2	0	2	0	2	0	0	2	2	0	2	0	0	2	2	0
a09	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
Chi	1	0	1	0	0.9	0.1	1	0	1	0	1	0	1	0	0.9	0.1	0.95	0.05
b01	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b02	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b03	2	0	2	0	1	1	2	0	2	0	2	0	2	0	1	1	2	0
b04	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b05	2	0	2	0	1	1	2	0	2	0	2	0	2	0	1	1	1	1
b06	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b07	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b08	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b09	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
In. Pak	1	0	1	0	0.95	0.05	1	0	1	0	1	0	1	0	0.95	0.05	1	0
c01	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c02	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c03	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c04	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c05	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c06	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c07	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c08	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c09	2	0	2	0	1	1	2	0	2	0	2	0	2	0	1	1	2	0
c10	2	0	2	0	2	0	2	0	2	0	n/a	n/a	2	0	2	0	2	0
Af. Amer	0.9	0.1	0.95	0.05	0.95	0.05	0.95	0.05	1	0	1	0	1	0	1	0	1	0
d01	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
d02	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
d03	2	0	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
d04	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
d05	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
d06	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
d07	1	1	2	0	2	0	2	0	2	0	n/a	n/a	2	0	2	0	2	0
d08	2	0	1	1	1	1	2	0	2	0	n/a	n/a	2	0	2	0	2	0
d09	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
d10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
SW Amer. Ind	1	0	1	0	0.65	0.35	0.95	0.05	1	0	1	0	1	0	0.6	0.4	1	0
e01	2	0	2	0	1	1	1	1	2	0	2	0	2	0	1	1	2	0
e02	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e03	2	0	2	0	1	1	2	0	2	0	2	0	2	0	1	1	2	0
e04	2	0	2	0	1	1	2	0	2	0	2	0	2	0	1	1	2	0
e05	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e06	2	0	2	0	1	1	2	0	2	0	2	0	2	0	1	1	2	0
e07	2	0	2	0	1	1	2	0	2	0	2	0	2	0	0	2	2	0
e08	2	0	2	0	0	2	2	0	2	0	2	0	2	0	0	2	2	0
e09	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
e10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0

FIGURE 8a, sheet 5 of 6

120/139

	3' Flanking Exon 8 (AL078582)															
	54404		54460		48798		48924		49005		49116		49148		49251	
	G	A	C	A	C	G	G	A	A	G	C	G	C	T	A	G
total	0.88	0.12	0.88	0.13	0.99	0.01	0.99	0.01	0.98	0.02	0.64	0.36	0.99	0.01	0.99	0.01
N. Eur	0.85	0.15	1	0	1	0	1	0	0.95	0.05	0.7	0.3	1	0	1	0
a01	0	2	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a02	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
a03	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
a04	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
a05	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
a06	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a07	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
a08	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
a09	2	0	2	0	n/a	n/a	2	0	1	1	2	0	2	0	2	0
a10	2	0	n/a	n/a	n/a	n/a	2	0	2	0	1	1	2	0	2	0
Chi	0.78	0.22	0.86	0.14	1	0	1	0	1	0	0.78	0.22	1	0	1	0
b01	0	2	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0
b02	1	1	2	0	2	0	2	0	2	0	1	1	2	0	2	0
b03	2	0	1	1	2	0	2	0	2	0	1	1	2	0	2	0
b04	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
b05	2	0	1	1	2	0	2	0	2	0	1	1	2	0	2	0
b06	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
b07	2	0	2	0	n/a	n/a	2	0	2	0	1	1	2	0	2	0
b08	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0
b09	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0	2	0
b10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
In. Pak	0.85	0.15	0.94	0.06	1	0	1	0	1	0	0.72	0.28	1	0	1	0
c01	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
c02	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
c03	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
c04	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c05	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
c06	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
c07	1	1	n/a	n/a	2	0	2	0	2	0	n/a	n/a	2	0	2	0
c08	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
c09	1	1	1	1	2	0	2	0	2	0	2	0	2	0	2	0
c10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
Af. Amer	0.93	0.07	1	0	0.94	0.06	1	0	0.94	0.06	0.31	0.69	0.94	0.06	1	0
d01	n/a	n/a	n/a	n/a	2	0	2	0	2	0	1	1	2	0	2	0
d02	1	1	2	0	1	1	2	0	2	0	1	1	2	0	2	0
d03	2	0	n/a	n/a	2	0	2	0	2	0	1	1	2	0	2	0
d04	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
d05	2	0	n/a	n/a	2	0	2	0	2	0	0	2	2	0	2	0
d06	2	0	2	0	2	0	2	0	1	1	2	0	1	1	2	0
d07	n/a	n/a	n/a	n/a	2	0	2	0	2	0	0	2	2	0	n/a	n/a
d08	2	0	2	0	2	0	2	0	2	0	0	2	2	0	2	0
d09	2	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
d10	2	0	2	0	2	0	2	0	2	0	0	2	2	0	2	0
SW Amer. Ind	1	0	0.65	0.35	1	0	0.94	0.06	1	0	0.67	0.33	1	0	0.92	0.08
e01	2	0	2	0	2	0	2	0	2	0	1	1	2	0	1	1
e02	2	0	2	0	n/a	n/a	1	1	2	0	1	1	2	0	2	0
e03	2	0	1	1	n/a	n/a	2	0	2	0	2	0	2	0	2	0
e04	2	0	1	1	n/a	n/a	2	0	2	0	1	1	2	0	2	0
e05	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
e06	2	0	1	1	n/a	n/a	2	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a
e07	2	0	0	2	1	n/a	2	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a
e08	2	0	0	2	n/a	n/a	2	0	2	0	2	0	2	0	2	0
e09	2	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
e10	2	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

FIGURE 8a, sheet 6 of 6

121/139

	exon 1A 170035		exon 1A 170068		exon 1A 170256		exon 1A 170368		exon 1A 170487		exon 1B 169812		exon 1B 169823		exon 1C 167950	
	C	A	G	T	C	T	A	G	G	C	C	G	A	G	C	G
	1.00	0.00	0.99	0.01	0.55	0.45	0.99	0.01	0.87	0.13	0.99	0.01	0.99	0.01	0.98	0.02
T1	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T2	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T3	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T4	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T5	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T6	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T7	2	0	2	0	1	1	2	0	1	1	2	0	2	0	2	0
T8	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
T9	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T10	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T11	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T12	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T13	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T14	2	0	2	0	1	1	2	0	2	0	1	1	1	1	2	0
T15	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T16	n/a	n/a	n/a	n/a	n/a	n/a	2	0	n/a	n/a	2	0	2	0	2	0
T17	2	0	1	1	1	1	2	0	2	0	2	0	2	0	2	0
T18	2	0	2	0	2	0	2	0	1	1	2	0	2	0	1	1
T19	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T20	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T21	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T22	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T23	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T24	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T25	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T26	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T27	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T28	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T29	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T30	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T31	2	0	2	0	2	0	1	1	0	2	2	0	2	0	1	1
T32	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T33	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T34	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T35	2	0	2	0	1	1	2	0	1	1	2	0	2	0	2	0
T36	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T37	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T38	2	0	2	0	1	1	2	0	1	1	2	0	2	0	2	0
T39	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T40	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
T41	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T42	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T43	2	0	2	0	1	1	2	0	1	1	2	0	2	0	2	0
T44	n/a	n/a	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T45	2	0	2	0	2	0	2	0	0	2	2	0	2	0	2	0
T46	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T47	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T48	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0

FIGURE 8b, sheet 1 of 12

122/139

	exon 1C 167989		exon 1C 168054		exon 1E 64331		exon 1F 52901		exon 1F 52877		exon 1G 18783		exon 1G 18937		exon 1G 19034	
	T	G	C	G	C	T	C	T	G	T	C	T	A	C	T	C
	0.83	0.17	0.99	0.01	0.63	0.38	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
T1	2	0	2	0	1	1	n/a	n/a	n/a	n/a	2	0	2	0	2	0
T2	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T3	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T4	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T5	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T6	2	0	2	0	1	1	n/a	n/a	n/a	n/a	2	0	2	0	2	0
T7	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T8	0	2	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T9	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T11	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T12	1	1	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0
T13	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T14	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T15	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T16	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T17	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T18	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T19	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T20	2	0	2	0	0	2	n/a	n/a	n/a	n/a	2	0	2	0	2	0
T21	2	0	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0
T22	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T23	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T24	2	0	2	0	1	1	n/a	n/a	n/a	n/a	2	0	2	0	2	0
T25	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T26	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T27	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T28	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T29	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T30	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T31	0	2	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T32	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T33	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T34	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T35	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T36	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T37	1	1	1	1	1	1	2	0	2	0	2	0	2	0	2	0
T38	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T39	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T40	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T41	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T42	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T43	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T44	2	0	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0
T45	0	2	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0
T46	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T47	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T48	1	1	2	0	1	1	n/a	n/a	n/a	n/a	2	0	2	0	2	0

FIGURE 8b, sheet 2 of 12

123/139

	Intron 3 243187		exon 3 243055		exon 4 306292		exon 4 306382		exon 6 423067		Intron 6 423149		Intron 6 423163		Intron 6 423220	
	C	T	C	T	G	A	C	G	T	C	G	T	A	G	G	A
	0.63	0.38	0.97	0.03	0.99	0.01	0.83	0.17	1.00	0.00	0.88	0.13	0.90	0.10	0.70	0.30
T1	1	1	2	0	2	0	1	1	2	0	2	0	2	0	2	0
T2	1	1	1	1	2	0	1	1	2	0	2	0	2	0	2	0
T3	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T4	1	1	1	1	2	0	2	0	2	0	2	0	2	0	1	1
T5	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
T6	1	1	2	0	1	1	1	1	2	0	1	1	1	1	2	0
T7	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T8	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T9	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T11	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T12	1	1	2	0	2	0	1	1	2	0	0	2	0	2	2	0
T13	0	2	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T14	0	2	2	0	2	0	2	0	2	0	0	2	1	1	2	0
T15	1	1	2	0	2	0	2	0	2	0	1	1	1	1	2	0
T16	2	0	2	0	2	0	2	0	n/a	n/a	2	0	2	0	2	0
T17	0	2	2	0	2	0	0	2	2	0	2	0	2	0	2	0
T18	1	1	2	0	2	0	2	0	2	0	1	1	2	0	1	1
T19	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T20	0	2	2	0	2	0	0	2	2	0	2	0	2	0	2	0
T21	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T22	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T23	1	1	2	0	2	0	1	1	2	0	1	1	0	2	2	0
T24	0	2	1	1	2	0	0	2	2	0	2	0	2	0	2	0
T25	0	2	2	0	2	0	2	0	2	0	2	0	2	0	0	2
T26	1	1	2	0	2	0	1	1	2	0	2	0	2	0	2	0
T27	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
T28	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T29	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
T30	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
T31	2	0	2	0	2	0	2	0	2	0	1	1	2	0	1	1
T32	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T33	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T34	0	2	2	0	2	0	1	1	2	0	0	2	0	2	2	0
T35	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T36	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T37	0	2	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T38	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T39	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
T40	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T41	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T42	1	1	2	0	2	0	1	1	2	0	2	0	2	0	1	1
T43	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T44	0	2	2	0	2	0	1	1	2	0	1	1	1	1	1	1
T45	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T46	0	2	2	0	2	0	1	1	2	0	2	0	2	0	2	0
T47	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T48	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0

FIGURE 8b, sheet 3 of 12

124/139

	Intron 6 423232		Intron 6 423258		Intron 7 460553		Intron 7 460564		exon 8 461199		exon 8 461199		exon 8 461231		exon 8 461337	
	C	G	A	G	C	T	G	A	G	A	T	C	A	G	A	C
	0.98	0.02	0.89	0.11	0.96	0.04	0.99	0.01	0.86	0.12	0.99	0.01	0.99	0.01	1.00	0.00
T1	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T2	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T3	2	0	2	0	2	0	2	0	1	1	1	1	2	0	2	0
T4	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T5	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T6	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
T7	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T8	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T9	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
T10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T11	2	0	2	0	2	0	2	0	0	2	2	0	2	0	2	0
T12	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
T13	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T14	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
T15	2	0	1	1	2	0	2	0	1	1	n/a	n/a	n/a	n/a	n/a	n/a
T16	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T17	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T18	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
T19	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
T20	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T21	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
T22	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
T23	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
T24	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T25	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T26	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T27	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T28	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T29	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T30	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
T31	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
T32	2	0	2	0	1	1	2	0	2	0	2	0	1	1	2	0
T33	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T34	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
T35	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T36	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T37	2	0	2	0	2	0	1	1	1	1	2	0	2	0	2	0
T38	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T39	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T40	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
T41	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T42	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T43	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0
T44	2	0	1	1	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0
T45	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
T46	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
T47	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T48	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0

FIGURE 8b, sheet 4 of 12

125/139

	exon 8 461520		exon 8 461843		exon 8 461968		exon 8 462125		exon 8 4623998		exon 8 462683		exon 8 462949		exon 8 463958	
	C	G	G	A	T	C	C	T	G	A	C	A	T	G	T	C
	0.97	0.03	0.99	0.01	0.51	0.49	1.00	0.00	1.00	0.00	0.95	0.05	1.00	0.00	0.96	0.04
T1	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T2	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T3	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T4	2	0	2	0	0	2	n/a	n/a	2	0	2	0	2	0	1	1
T5	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T6	2	0	2	0	1	1	2	0	2	0	1	1	2	0	2	0
T7	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T8	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T9	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T11	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T12	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T13	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
T14	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T15	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T16	2	0	2	0	2	0	2	0	2	0	1	1	2	0	n/a	n/a
T17	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T18	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T19	2	0	2	0	1	1	2	0	2	0	2	0	2	0	1	1
T20	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T21	2	0	2	0	n/a	n/a	2	0	2	0	2	0	2	0	2	0
T22	2	0	2	0	1	1	2	0	n/a	n/a	2	0	2	0	1	1
T23	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T24	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T25	2	0	2	0	2	0	2	0	2	0	0	2	2	0	2	0
T26	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
T27	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T28	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T29	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T30	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T31	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T32	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T33	1	1	2	0	1	1	2	0	2	0	2	0	2	0	n/a	n/a
T34	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T35	2	0	1	1	0	2	2	0	2	0	2	0	2	0	n/a	n/a
T36	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T37	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T38	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T39	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T40	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T41	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T42	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T43	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T44	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T45	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
T46	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
T47	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
T48	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0

FIGURE 8b, sheet 5 of 12

126/139

	exon 8 463966		exon 8 464237		exon 8 464735		exon 8 465074		exon 8 54404		exon 8 54460	
	C	T	G	A	T	A	T	C	G	A	C	A
	0.99	0.01	0.98	0.02	0.96	0.04	1.00	0.00	0.74	0.26	0.97	0.03
T1	2	0	2	0	2	0	2	0	2	0	2	0
T2	2	0	2	0	2	0	2	0	2	0	2	0
T3	2	0	2	0	2	0	2	0	2	0	2	0
T4	2	0	2	0	1	1	2	0	2	0	2	0
T5	2	0	2	0	2	0	2	0	2	0	2	0
T6	2	0	2	0	1	1	2	0	2	0	1	1
T7	2	0	2	0	2	0	2	0	1	1	2	0
T8	2	0	1	1	2	0	2	0	2	0	2	0
T9	2	0	2	0	2	0	2	0	2	0	2	0
T10	2	0	2	0	2	0	2	0	1	1	2	0
T11	2	0	2	0	2	0	2	0	2	0	2	0
T12	2	0	2	0	2	0	2	0	0	2	2	0
T13	2	0	2	0	2	0	2	0	1	1	2	0
T14	2	0	2	0	2	0	2	0	2	0	2	0
T15	2	0	2	0	2	0	2	0	2	0	2	0
T16	n/a	n/a	2	0	1	1	2	0	1	1	1	1
T17	2	0	2	0	2	0	2	0	2	0	2	0
T18	2	0	2	0	2	0	2	0	2	0	2	0
T19	2	0	2	0	2	0	2	0	2	0	2	0
T20	2	0	2	0	2	0	2	0	2	0	2	0
T21	2	0	2	0	2	0	2	0	1	1	n/a	n/a
T22	2	0	2	0	1	1	2	0	2	0	2	0
T23	2	0	2	0	2	0	2	0	1	1	2	0
T24	2	0	2	0	2	0	2	0	2	0	2	0
T25	2	0	2	0	2	0	2	0	1	1	2	0
T26	2	0	2	0	2	0	2	0	1	1	2	0
T27	2	0	2	0	2	0	2	0	2	0	n/a	n/a
T28	2	0	2	0	2	0	2	0	0	2	2	0
T29	2	0	2	0	2	0	2	0	2	0	2	0
T30	2	0	2	0	2	0	2	0	2	0	2	0
T31	2	0	2	0	2	0	2	0	1	1	2	0
T32	2	0	2	0	2	0	2	0	1	1	n/a	n/a
T33	n/a	n/a	2	0	2	0	2	0	1	1	2	0
T34	1	1	2	0	2	0	2	0	1	1	2	0
T35	n/a	n/a	2	0	2	0	2	0	2	0	n/a	n/a
T36	2	0	2	0	2	0	2	0	0	2	2	0
T37	2	0	2	0	2	0	2	0	2	0	2	0
T38	2	0	2	0	2	0	2	0	2	0	2	0
T39	2	0	2	0	2	0	2	0	1	1	2	0
T40	2	0	2	0	2	0	2	0	1	1	2	0
T41	2	0	2	0	2	0	2	0	n/a	n/a	n/a	n/a
T42	2	0	2	0	2	0	2	0	0	2	2	0
T43	2	0	2	0	2	0	2	0	n/a	n/a	n/a	n/a
T44	2	0	2	0	2	0	2	0	n/a	n/a	n/a	n/a
T45	2	0	1	1	2	0	2	0	2	0	n/a	n/a
T46	2	0	2	0	2	0	2	0	2	0	n/a	n/a
T47	2	0	2	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a
T48	2	0	2	0	2	0	2	0	1	1	2	0

FIGURE 8b, sheet 6 of 12

127/139

	exon 1A 170035		exon 1A 170068		exon 1A 170256		exon 1A 170368		exon 1A 170487		exon 1B 169812		exon 1B 169823		exon 1C 167950	
	C	A	G	T	C	T	A	G	G	C	C	G	A	G	C	G
sum tumor	92	0	93	1	52	42	95	1	82	12	95	1	95	1	94	2
blood freq	1.00	0.00	0.99	0.01	0.50	0.50	0.99	0.01	0.92	0.08	0.99	0.01	0.99	0.01	0.98	0.02
B1	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B2	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B3	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B4	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B5	B6	B7	B8	0	2	0	2	0	2	0	2	0	2	0	2	0
B6	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B8	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B9	n/a	n/a	n/a	n/a	1	1	2	0	n/a	n/a	2	0	2	0	2	0
B10	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B11	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B12	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B13	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B14	2	0	2	0	1	1	2	0	2	0	1	1	1	1	2	0
B15	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B16	n/a	n/a	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0	2	0
B17	2	0	1	1	1	1	2	0	2	0	2	0	2	0	2	0
B18	2	0	2	0	2	0	2	0	1	1	2	0	2	0	1	1
B19	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B20	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B21	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B22	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B23	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B24	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B25	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B26	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B27	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B28	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B29	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B30	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B31	2	0	2	0	2	0	1	1	0	2	2	0	2	0	1	1
B32	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B33	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B34	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B35	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B36	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B37	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B38	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B39	n/a	n/a	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B40	2	0	2	0	0	2	2	0	1	1	2	0	2	0	2	0
B41	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B42	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B43	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B44	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B45	2	0	2	0	2	0	2	0	0	2	2	0	2	0	2	0
B46	n/a	n/a	n/a	n/a	na	na	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B47	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B48	n/a	n/a	2	0	0	2	2	0	2	0	2	0	2	0	2	0

FIGURE 8b, sheet 7 of 12

128/139

	exon 1C 167989		exon 1C 168054		exon 1E 64331		exon 1F 52901		exon 1F 52877		exon 1G 18783		exon 1G 18937		exon 1G 19034	
	T	G	C	G	C	T	C	T	G	T	C	T	A	C	T	C
sum tumor	80	16	95	1	60	36	78	0	78	0	96	0	96	0	96	0
blood freq	0.84	0.16	0.99	0.01	0.64	0.36	1.00	0.00	0.97	0.03	1.00	0.00	1.00	0.00	0.99	0.01
B1	2	0	2	0	1	1	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B2	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B3	2	0	2	0	1	1	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B4	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B5	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B6	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B7	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B8	0	2	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B9	2	0	2	0	0	2	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B11	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B12	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B13	2	0	2	0	1	1	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B14	1	1	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B15	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B16	2	0	2	0	1	1	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B17	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B18	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B19	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B20	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B21	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B22	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B23	2	0	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B24	2	0	2	0	1	1	2	0	1	1	2	0	2	0	2	0
B25	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B26	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B27	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B28	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B29	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B30	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B31	0	2	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B32	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B33	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B34	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B35	2	0	2	0	1	1	2	0	1	1	2	0	2	0	2	0
B36	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B37	1	1	1	1	1	1	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B38	1	1	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B39	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B40	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B41	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B42	1	1	2	0	0	2	2	0	2	0	2	0	2	0	1	1
B43	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B44	2	0	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0
B45	0	2	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B46	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B47	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B48	2	0	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0

FIGURE 8b, sheet 8 of 12

129/139

	Intron 3 243187		exon 3 243055		exon 4 306292		exon 4 306382		exon 6 423067		Intron 6 423149		Intron 6 423163		Intron 6 423220	
	C	T	C	T	G	A	C	G	T	C	G	T	A	G	G	A
sum tumor	60	36	93	3	93	1	78	16	94	0	84	12	86	10	67	29
blood freq	0.59	0.41	0.98	0.02	0.99	0.01	0.82	0.18	1.00	0.00	0.89	0.11	0.90	0.10	0.70	0.30
B1	1	1	2	0	2	0	1	1	2	0	2	0	2	0	2	0
B2	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B3	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B4	1	1	1	1	2	0	1	1	2	0	2	0	2	0	1	1
B5	1	1	2	0	2	0	1	1	2	0	2	0	2	0	1	1
B6	1	1	2	0	1	1	1	1	2	0	1	1	1	1	2	0
B7	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B8	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B9	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B11	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B12	1	1	2	0	2	0	1	1	2	0	1	1	1	1	2	0
B13	0	2	2	0	2	0	2	0	2	0	2	0	1	1	1	1
B14	0	2	2	0	2	0	2	0	2	0	0	2	1	1	2	0
B15	1	1	2	0	2	0	2	0	2	0	1	1	1	1	2	0
B16	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B17	0	2	2	0	2	0	0	2	2	0	2	0	2	0	2	0
B18	1	1	2	0	2	0	2	0	2	0	1	1	2	0	1	1
B19	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B20	0	2	2	0	2	0	0	2	2	0	2	0	2	0	2	0
B21	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B22	2	0	2	0	2	0	1	1	2	0	2	0	2	0	2	0
B23	1	1	2	0	2	0	1	1	2	0	1	1	0	2	2	0
B24	0	2	1	1	2	0	0	2	2	0	2	0	2	0	2	0
B25	0	2	2	0	2	0	2	0	2	0	2	0	2	0	0	2
B26	1	1	2	0	2	0	1	1	2	0	2	0	2	0	2	0
B27	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
B28	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B29	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
B30	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B31	2	0	2	0	2	0	2	0	2	0	1	1	2	0	1	1
B32	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B33	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B34	0	2	2	0	2	0	1	1	2	0	0	2	0	2	2	0
B35	0	2	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B36	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B37	0	2	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B38	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B39	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	2
B40	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B41	1	1	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B42	1	1	2	0	2	0	2	0	2	0	2	0	2	0	0	2
B43	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B44	0	2	2	0	2	0	1	1	2	0	1	1	1	1	1	1
B45	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B46	0	2	2	0	2	0	1	1	2	0	2	0	2	0	2	0
B47	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B48	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0

FIGURE 8b, sheet 9 of 12

130/139

	Intron 6 423232		Intron 6 423258		Intron 7 460553		Intron 7 460564		exon 8 461199		exon 8 461199		exon 8 461231		exon 8 461337	
	C	G	A	G	C	T	G	A	G	A	T	C	A	G	A	C
sum tumor	94	2	85	11	88	4	91	1	83	13	93	1	93	1	94	0
blood freq	0.98	0.02	0.88	0.13	0.98	0.02	1.00	0.00	#REF!	0.19	0.99	0.01	0.99	0.01	1.00	0.00
B1	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B2	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B3	2	0	2	0	2	0	2	0	1	1	1	1	2	0	2	0
B4	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B5	2	0	2	0	1	1	2	0	1	1	2	0	2	0	2	0
B6	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
B7	1	1	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B8	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B9	2	0	2	0	n/a	n/a	n/a	n/a	1	1	2	0	2	0	2	0
B10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B11	2	0	2	0	2	0	2	0	0	2	2	0	2	0	2	0
B12	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
B13	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
B14	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
B15	2	0	1	1	2	0	2	0	1	1	2	0	2	0	2	0
B16	2	0	2	0	n/a	n/a	n/a	n/a	2	0	n/a	n/a	n/a	n/a	n/a	n/a
B17	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B18	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
B19	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B20	1	1	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B21	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B22	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B23	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
B24	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B25	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B26	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B27	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B28	2	0	2	0	n/a	n/a	n/a	n/a	2	0	2	0	2	0	2	0
B29	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B30	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B31	2	0	1	1	2	0	2	0	2	0	2	0	2	0	2	0
B32	2	0	2	0	1	1	2	0	2	0	2	0	1	1	2	0
B33	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B34	2	0	0	2	2	0	2	0	2	0	2	0	2	0	2	0
B35	2	0	2	0	n/a	n/a	n/a	n/a	0	2	2	0	2	0	2	0
B36	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B37	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B38	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B39	2	0	2	0	n/a	n/a	n/a	n/a	2	0	n/a	n/a	2	0	2	0
B40	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B41	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B42	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B43	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B44	2	0	1	1	2	0	2	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a
B45	2	0	2	0	2	0	2	0	1	1	2	0	2	0	2	0
B46	2	0	2	0	n/a	n/a	n/a	n/a	1	1	2	0	2	0	2	0
B47	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B48	2	0	2	0	n/a	n/a	n/a	n/a	2	0	n/a	n/a	n/a	n/a	n/a	n/a

FIGURE 8b, sheet 10 of 12

131/139

	exon 8 461520		exon 8 461843		exon 8 461968		exon 8 462125		exon 8 4623998		exon 8 462683		exon 8 462949		exon 8 463958	
	C	G	G	A	T	C	C	T	G	A	C	A	T	G	T	C
sum tumor	93	3	95	1	48	46	94	0	94	0	91	5	96	0	86	4
blood freq	0.97	0.03	0.99	0.01	0.52	0.48	1.00	0.00	1.00	0.00	0.97	0.03	1.00	0.00	0.94	0.06
B1	1	1	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B2	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B3	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B4	2	0	2	0	0	2	2	0	2	0	2	0	2	0	1	1
B5	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B6	2	0	2	0	1	1	2	0	n/a	n/a	2	0	n/a	n/a	2	0
B7	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B8	2	0	2	0	2	0	2	0	n/a	n/a	2	0	2	0	2	0
B9	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B10	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B11	2	0	2	0	0	2	2	0	2	0	2	0	2	0	n/a	n/a
B12	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B13	2	0	2	0	2	0	2	0	n/a	n/a	2	0	2	0	n/a	n/a
B14	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B15	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B16	n/a	n/a	n/a	n/a	n/a	n/a	2	0	2	0	1	1	2	0	n/a	n/a
B17	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B18	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B19	2	0	2	0	1	1	2	0	2	0	2	0	2	0	1	1
B20	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B21	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B22	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	1
B23	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B24	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B25	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
B26	2	0	2	0	2	0	2	0	2	0	1	1	2	0	2	0
B27	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B28	2	0	2	0	1	n/a	2	0	2	0	2	0	2	0	n/a	n/a
B29	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B30	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B31	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B32	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B33	1	1	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B34	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B35	2	0	1	1	1	1	2	0	2	0	2	0	2	0	2	0
B36	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B37	2	0	2	0	1	1	2	0	2	0	2	0	n/a	n/a	2	0
B38	2	0	2	0	0	2	2	0	2	0	2	0	2	0	2	0
B39	2	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
B40	2	0	2	0	1	1	2	0	n/a	n/a	2	0	n/a	n/a	n/a	n/a
B41	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B42	2	0	2	0	1	1	2	0	2	0	2	0	2	0	1	1
B43	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B44	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B45	2	0	2	0	1	1	2	0	2	0	2	0	2	0	2	0
B46	2	0	2	0	0	2	2	0	2	0	2	0	2	0	n/a	n/a
B47	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
B48	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

FIGURE 8b, sheet 11 of 12

132/139

	exon 8 463966		exon 8 464237		exon 8 464735		exon 8 465074		exon 8 54404		exon 8 54460	
	C	T	G	A	T	A	T	C	G	A	C	A
sum tumor	89	1	94	2	92	4	94	0	65	23	74	2
blood freq	0.99	0.01	0.98	0.02	0.90	0.10	1.00	0.00	0.74	0.26	0.96	0.04
B1	2	0	2	0	2	0	2	0	n/a	n/a	n/a	n/a
B2	2	0	2	0	2	0	2	0	2	0	2	0
B3	2	0	2	0	2	0	2	0	2	0	2	0
B4	2	0	2	0	1	1	2	0	2	0	2	0
B5	2	0	2	0	2	0	2	0	2	0	2	0
B6	2	0	2	0	1	1	2	0	2	0	1	1
B7	2	0	2	0	2	0	2	0	1	1	2	0
B8	2	0	1	1	2	0	2	0	2	0	2	0
B9	2	0	2	0	2	0	2	0	n/a	n/a	n/a	n/a
B10	2	0	2	0	2	0	2	0	1	1	2	0
B11	n/a	n/a	2	0	2	0	2	0	2	0	2	0
B12	2	0	2	0	1	1	2	0	1	1	2	0
B13	n/a	n/a	2	0	1	1	2	0	n/a	n/a	n/a	n/a
B14	2	0	2	0	2	0	2	0	2	0	n/a	n/a
B15	2	0	2	0	2	0	2	0	2	0	2	0
B16	n/a	n/a	2	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a
B17	2	0	2	0	2	0	2	0	2	0	2	0
B18	2	0	2	0	2	0	2	0	1	1	2	0
B19	2	0	2	0	1	1	2	0	2	0	2	0
B20	2	0	2	0	2	0	2	0	2	0	2	0
B21	2	0	2	0	2	0	2	0	1	1	2	0
B22	2	0	2	0	1	1	2	0	2	0	2	0
B23	2	0	2	0	2	0	2	0	1	1	2	0
B24	2	0	2	0	2	0	2	0	2	0	2	0
B25	2	0	2	0	1	1	2	0	1	1	1	1
B26	2	0	2	0	1	1	2	0	1	1	1	1
B27	2	0	2	0	2	0	2	0	1	1	2	0
B28	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
B29	2	0	2	0	2	0	2	0	0	2	2	0
B30	2	0	2	0	2	0	2	0	2	0	2	0
B31	2	0	2	0	2	0	2	0	1	1	2	0
B32	2	0	2	0	2	0	2	0	2	0	2	0
B33	2	0	2	0	2	0	2	0	1	1	2	0
B34	1	1	2	0	2	0	2	0	1	1	2	0
B35	2	0	2	0	2	0	2	0	1	1	2	0
B36	2	0	2	0	2	0	2	0	0	2	2	0
B37	2	0	2	0	2	0	2	0	2	0	2	0
B38	2	0	2	0	2	0	2	0	2	0	2	0
B39	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
B40	2	0	2	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a
B41	2	0	2	0	2	0	2	0	1	1	2	0
B42	2	0	2	0	1	1	2	0	2	0	2	0
B43	2	0	2	0	2	0	2	0	2	0	2	0
B44	2	0	2	0	2	0	2	0	1	1	2	0
B45	2	0	1	1	2	0	2	0	2	0	2	0
B46	n/a	n/a	2	0	2	0	n/a	n/a	n/a	n/a	n/a	n/a
B47	2	0	2	0	2	0	2	0	1	1	2	0
B48	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

FIGURE 8b, sheet 12 of 12

ER 1 Exons with SNPs v2.0

ER1 Exon 1G (18941-19032 of SEQ ID NO:1)

TTGTACCTGCTACACACATTTTCACTAGTATGTGATGATATTCATCACAAACACAGTATTGGCCACA
TTTTCCCTCACTGTGAAGTGCACATTTGACATCCTTTAGAAAAATTACTGACGGTTTGGAGACGATTGTT
CTGTGCTTTCTTTCAGTCAGCATAAATTTTCCCGAAGCAGAGATGACTCTTCCAGACTTGCTACCAATGC
TTGAACAACACTGTGTAAGCTTAGTCCAAAAAATAATTGATTAATAGATTTTATTTTGGTAGATTCTAA
GGTTCCAAAGCagtcagagaataatcgcagagcgctcaaatatctccaaatctgataccaatccttttga
ttgtgaattatattctgtagctaccaagaagGTAAGTTTATTTTCTACTCTATTAACTTTCCTCTT
GGACAACCTGAATATTAAAGATGACTATGTAAAGGAGTTATCAGACCAAGGCTCACACATCAGGATAAAAG
CACATGCCATAGAAAGAACATTTGTGTCTCAAAAGGTGATACCAAGACAAGGCTGTGGGATATATATGGG

Exon ER1 1F (52818-52940 of SEQ ID NO:1)

TTCCAACTCCACATGCTGTCTAGACTTCAAGCTTTATTAGGAATAAAGAGAAAAATCGGCTGGATGGCAT
AAAAATATTTTCAGGCAGATTAAACATGATTTACCTCTCTTGAACATCCATCTTAATGGAAAGTGCTAA
GAAAGTTAGATTTCGGGCTGGCTTGGCAAAAGCAAGGCCACCCCTCCTCTATTTTCAATGAGATTTT
CCAATCCTAGTCAAAATGTGGTGTAGTTCTTTATTTTGGATTACTGCAATTCCTAAATTCATGGTCAT
AACAGCCTCCTGTCTACCGACTCAGAACGGATTTTACaaaactgaaaaatgcaggctccatgctcagaag
ctctttaacaggctgaaaggtccatgCtcccttctctgccattctatagcataagaagacagtctct
gagtgataatctctcttcaagTAGGTACTCCTATTCTCTCAATTTATTTTTCCTTTTTCATATAAT
GTGCTACTGTTTACAGCATATTGTAACCTTCAGAGCTTACCTCTCATCTTTTAAAAAATGTCATTTTTT
GTCTTTCTGCTCCCAAGGATATTTCG

52877 C/A 2,3(N) ;

Exon ER1 1E (64150-64280 of SEQ ID NO:1)

AGCCAAACATTTGATTTCTCAGTGCCTATTGATAAGTGAGACTACTTTTCTTTTAAACAGCCATTATTCAC
TTAAGTGGGAGTCAACTAGCTTTAATTAAAGGAATCTAGAAATCACCCACATCTCCCTTCTCTCT
CTGTTAAAAAACAAGGaaagaagaaactaggaaggagtaagcacaaagatctcttcacattctccgg
gactgcggtaccaaatatcagcacagcactcttgaaaaaggatgtagattttaatctgaaactttgaacc
atcactgagGTATGTGTAACATACTAGTTTCCTCTCTCTCTGACTTTGTCCGTAATGATAAG
ATCTAATTTGGTCATCAGTTTGGAGAACGATTTTTCATTTAATTTCTTTTCATTATCAAGTGTGATTGTC
AGGGGCTTAGCAGTACACCTACTATCTGATGGGCACCTACATGCGTTGCTT

56346 A/G 2,3(N,I,A,S)

Exon ER1 1D (166228-166322 of SEQ ID NO:1)

ATGGGTCTCAAAGGGAGTGGCCGAAATGCAATGGAAAAAGAGAGATTGTAAGCTAGAAGGCTTAGGAAT
TGCCCTCTTGATTAGGTGGAAAGGCAAGGGAATAATCAGCCCTCGAAGAGACAGTGAATTTAATCTGG
GTGGCTGGAGAGACAGTGTGCTGGGCACAGACACGGGGAGTTGAGAGGAACACCATGTTTGAGAAATGG

FIGURE 9, sheet 1 of 7

169812 C/G 2, 3(A,S); 169823 A/G 2
170068 G/T 2
170256 T/C 2, 3(all), 6
170368 A/G 2, 3(A)
170487 q/c 2, 3(n,c,a), 6

ER1 Exon 2 (204912-205102 of SEQ ID NO:1)

CAAGTTTGCAATAAACAAATTTCCCTCAAGGTTAATAATAATAGCAACACCTTTTGCTGCAACAGACGGC
AAGAGGTAATGAAGATTAGCTTACATATGATTCATTATTTCAAAATGTGAGGATAAAGTGGATCTGCT
GCATCTCCAGAGAGTGCAATGTTTGTCTTTCTAATGTTAATGGATTACTGTTTTCCTCCCGGAGGCC
aaattcagataaatcgacgcaggggtggcagagaaagattggccagtagcacaatgacaagggaagtatggct
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AATTGTACAAAACATGAATCCCTAGTAGGTCCACTAGTATCTTTGGTGAACACATGGAGAAGAGACAGGA
TCTCAGGAGAAGGAGTTGACACATGGCAGGCAGCTGAGGCTGAGTAATTCGCTTCCTTCCTTTGGCAA
GACTCAATCAGTCTTGAGCAACTCTACAGAAGAAATCCACTAGCTGGATCTCTGAGGAAAAAAGAAATGT

ER1 Exon 3 (242970-243086 of SEQ ID NO:1)

ACACCACCATACCAGGTTTTTTTGTATTTTAGTAGACGGGGTTTCACCATGTTGGTCAGGCTGGT
CTTGAACTCCTGACGTCGTGATCCACCTGCCTCGGCTCCCAAGTTCTGGGATTACAGGCATGAGCCAC
CGTGCCCGCCCATGAGAGGTTTTTGTGCACTCAAGAGGACAGAAAAAGCAGGCGAGGCTGGGGAGC
AACATAGTAAGGCTGAGGAAGTATAGGAAACACAGCCTCCAAAAGGTTCCCTGTAGATTCTGACTGGCT
AAGTTTCTCTGAAATAAATTAATCTGTCTCTTGTCTTTTAATAGacataaacgactatatgtgtccagc
caccacacagtgaccattgataaaaaacagagggaagctgcagcggcctgccggctccgtTaaatgctac
gaagtgggaatgatgaaagggtgGTAGGTACATCTCTCCAGGGGCCCTTGGGGATGGCCCTGGCCACCGC
CCAGTGTGGCTCTACCCATTGGAATAACACCATGGGAATTTGTGTTTTTTCTTTAAATGTTTTTTT
TC'TATTCTTATTTTCTTTGCAACAAAGTATTTTTCATAATCCATTTTATTTTAAAGGTGGAGTGTC
TGGAAC TGGA

243055 C/T 2, 6
243187 T/C 2, 3 (all)

ER1 Exon 4 (306168-306503 of SEQ ID NO:1)

TATAACACCTGTTACACACACACCCCTACCTAGTGTGCGAATCAGTTTGTATGGGCTCACCAAGCCT
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TGGTATTTACACCATGAATAATGGCATGTTATGTTGGTGTAGTATTACACCATGAAAACCTGCTACAAATAG
AAATCTTTTCTTCTCTTGGAGAGCCACTTGTGTAACACTTACACGCTCACCTGTGCTTGAAAGTAT
TTCTTCAATAAAATGAAGCTGGTAGCTTTGAAAATTTTGTATAAAGTTTACACGGGAAAAAAT
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acacaagcggccagagagatgatgggagggcaggggtgaagtgggtctgctggagacatgagagctgcc
aacctttggccaaagcccGctcatgatcaaacgctctaaagagaacagcctggcctgtccctgacggccg
accagatggtcagtgccctgttggatgctgagccccDatactctattccgagtagtatcctaccagacc
cttcagtgaaagcttcgatgggcttactgaccacacccctggcagacaggagctggttcacatgatcaac

306292 G/A 2
306382 C/G 2, 3 (C, I, S), 6

FIGURE 9, sheet 3 of 7

tgggcgaagagggtgccagGTAAAGAAATGCGAAGCCGACGCTTTTAAAGAGTCAAATAGCTTTTCAAGAACAATTG
TTGTGATGTCATGGGAGAAAATAGTGGGGAAAAAGAACCAATAACATGTTATGTAAATGGTTTTCAAGGTT
ACAGGAGATGTGTTCAATTTTCAGATCAATCAATACACTGTAATTTTCAGGAGATTAGGAATAATAATATTTTA
AATCAGAATCTAGAAGACTGAAATTCCTAAATTTGACATAATATTTTAAACCCCATCTCAATTTACCBAAA
AGATTATAGGTTGCACACATACATGCTAAACAATAATTAATAGTGATGTTTACAGTAGCAGCAAAACCTTTTAA
ACTATAATGAACACAAAGTTTGTAATTAATTAATGACCTTTTGTGAAAACAATCTCAATATTATTAATCAACG

ER1 Exon 5 (373640-373778 of SEQ ID NO:1)

GTAATGATTGGAGAAAGCTTAAATCTCCTAGTTCACCAATTAGAAAAACAAGAACACAACTTTGGTGGTTATT
ACCGAAGTAATCAATAATGTCACCTTTTTTTTCCATCTGACTCAATATCCCAAGTGATTAATTTATATATATG
GAGTTTTCTGAGTCTTTTACATATTACAAAAAGAGTGTGATTTAGGGACGAAGCAAGAAAAATAA
AAATTTAGTGACTTTCATTTCTGCTGTGCCCAATTCCATTGGGCATAGGCAAGTAATTTAAATTTCT
TAGCACCTTAGCATCTTCTACTCAACACAGAAATGAGGAACAGTCACAGGTACTATTATATAGCTGTCTAAG
TAGAAGGCACACAAGTTTTCACACTGAGTATAACACTTTATAGAAAGCTAAGTGTGTTGCTCAAGTTGGT
ACATTTCTGTAGATGTGACACTATGGCACTAAGAAACTTAATGCCACACTTGAATTCATTTGAGATAGCTA
GACTTTAAAAATAATTACTATTGACTTCACTATAAAGTATTTCTGTTCTGTTATGCAATTTACTCCATCTAGTAGAAA
ATAGACCTTTGTCAGTTCAAAATCCCTGTGTCATTTACCAGTAATGAGTCTTTTTCATTTGAGTCAG
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GGAATGTGGGTCCTCATTTGTTTTTTTTTTTCAGTCACTTGCTTAGAGTCATAGAAATTTAGATATTACTCAA
TAGACGTCGCCACTGATAGACTCCACCCCTGCACCACTGTGATGCTAAACACTTTACATATATATTATCT
CATTTAATCATCAACCGGACTCTAGGAGGCAGGAATGTTCATCCATGTTTTACCAGAAAGGAAACTAA
ATCTCAGAGACATCTGCTACTTGCAAAAAGAGGAAAGCTCAATAATGGTGGAGCCAGAGTTCAAAATTC
AGAGTCTTTCTGGCTCCGGTATGCTCTGTTACCTCTGTGCTGGGCACATGGTCTTCCCACCTCTCATGTT

ER1 EXON 6 (422964-423097 of SEQ ID NO:1)

ATTGTAGTGTCTTGTACTTCAAAGCACATACAAAACACAACCATCAGGACTTGTACATTATTGAAG
GCTATGAGATCTTCAGCCGAGGCCCTGTTTTATTTCCACAGAACTACCACATTTGTTAGAATATAGTAGC
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FIGURE 9, sheet 4 of 7

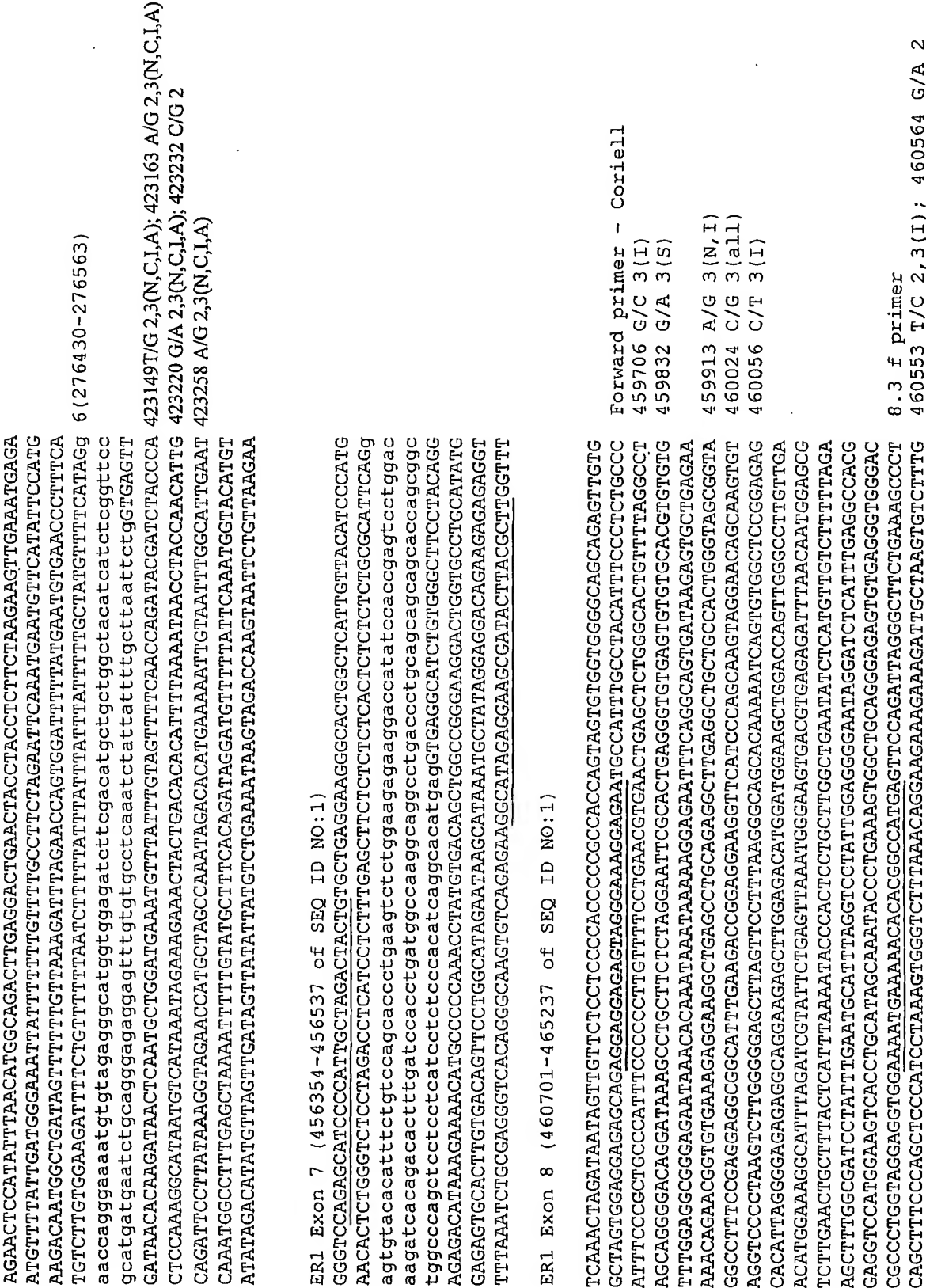


FIGURE 9, sheet 5 of 7

138/139

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460929 A/G 1,2,3(all),4,5,6

461199 T/C 2 461231 A/G 2

461337 A/C 3(A)

461520 G/C 2

461843 G/A 2

461968 T/C 2,3(all)
8.25 f primer
462125 C/T 3(A)
8.3r primer

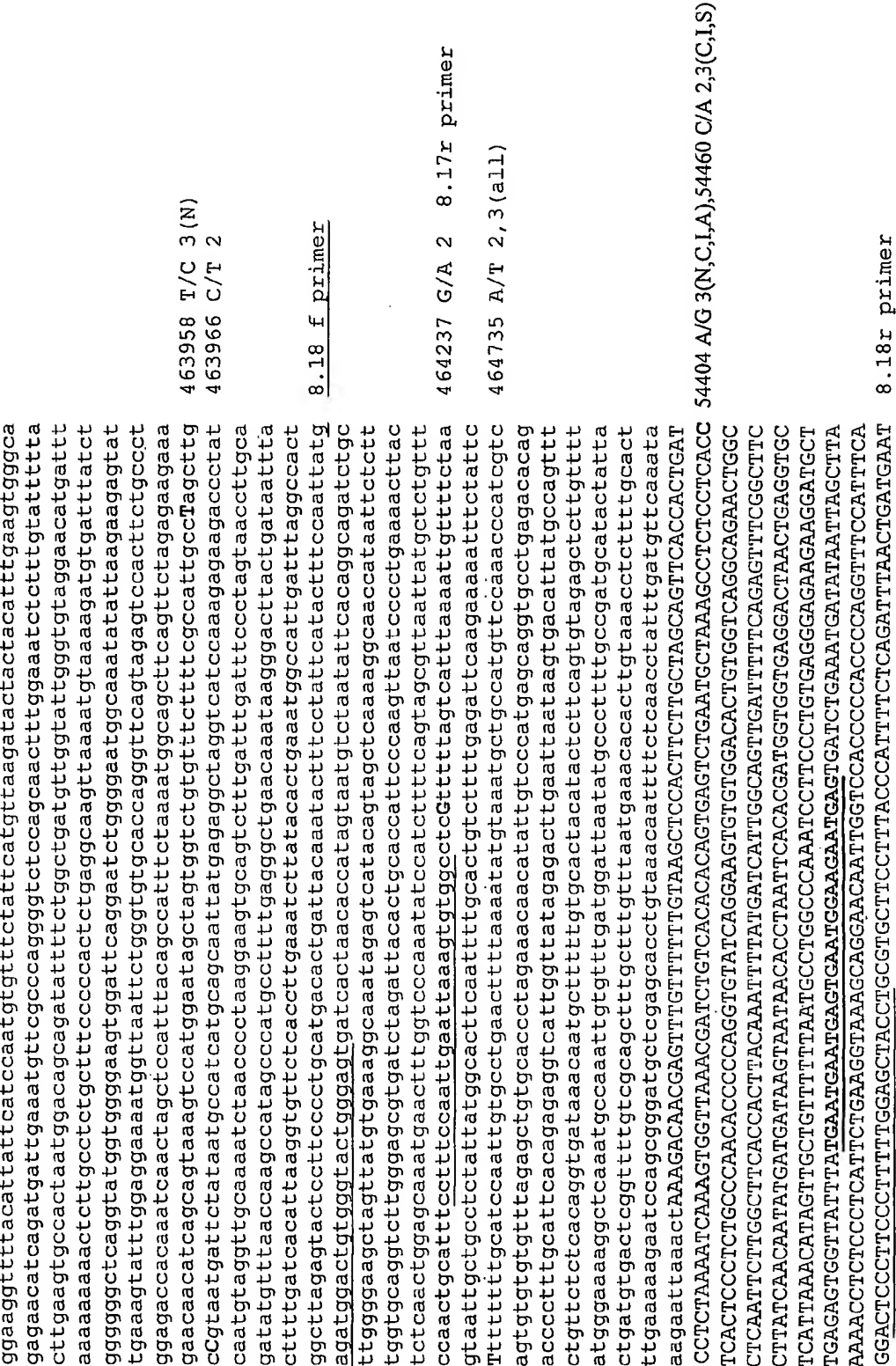
462683 C/A 3(I,A,S)

462949 T/G (A,S)

8.17f primer / 8.25r primer

FIGURE 9, sheet 6 of 7

139/139



(bold = SNP position, underlined = primer sequences, lowercase = exon.)

FIGURE 9, sheet 7 of 7

SEQUENCE LISTING

<110> KALUSH, Francis; CASSEL, Michael J.; HWANG, Stuart Soo-In; WINN-DEEN, Emily S.

<120> Estrogen receptor alpha variants and
methods of detection thereof

<130> CL000258PCT

<150> 60183756

<151> 2000-02-22

<150> 09692414

<151> 2000-10-20

<150> 09768184

<151> 2001-01-24

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Ala	Thr	Val													
	595														

(19) World Intellectual Property Organization
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30 August 2001 (30.08.2001)

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(10) International Publication Number
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09/692,414 20 October 2000 (20.10.2000) US
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- (74) Agent: CELERA GENOMICS CORP.; Robert A. Millman, Patent Director, 45 West Gude Drive C2-4, Rockville, MD 20850 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
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- Published:**
— with international search report
- (88) Date of publication of the international search report:
14 March 2002
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



WO 01/62969 A3

(54) Title: ESTROGEN RECEPTOR ALPHA VARIANTS AND METHODS OF DETECTION THEREOF

(57) Abstract: The present invention is based on sequencing genomic DNA from human chromosome 6 and cDNAs to define the genomic structure of estrogen receptor alpha genes and novel polymorphism/haplotypes in the estrogen receptor gene/protein. Such polymorphism/haplotypes can lead to a variety of disorders that are mediated/modulated by a variant estrogen receptor, such as a susceptibility to cancer, osteoporosis, cardiovascular disorder, etc. Based on this sequencing approach, the present invention provides genomic nucleotide sequences, cDNA sequences, amino acid sequences and sequence polymorphism/haplotypes in the ESR-alpha genes, methods of detecting these sequences/polymorphism/haplotypes in a sample, methods of determining a risk of having or developing a disorder mediated by a variant estrogen receptor and methods of screening for compounds used to treat disorders mediated by a variant estrogen receptor.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/05358

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12Q1/68 C07K14/705 C07K16/28 C12N5/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12Q C12N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, SEQUENCE SEARCH, WPI Data, PAJ, MEDLINE, BIOSIS, EMBASE, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MURPHY L C ET AL.: "Estrogen receptor variants and mutations" JOURNAL OF STEROID BIOCHEMISTRY & MOLECULAR BIOLOGY, vol. 62, no. 5-6, 1997, pages 363-372, XP001010877 cited in the application * see especially Table 2 * the whole document --- -/--	17



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

15 August 2001

Date of mailing of the international search report

20. 11. 2001

Name and mailing address of the ISA

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Authorized officer

Knehr, M

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/05358

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DOTZLAW H ET AL.: "Characterization of estrogen receptor variant mRNAs from human breast cancers"</p> <p>MOLECULAR ENDOCRINOLOGY, vol. 6, no. 5, 1992, pages 773-785, XP001012041</p> <p>* see especially nucleotide position 232 within Fig.2 *</p> <p>the whole document</p> <p>---</p>	17
A	<p>SCHUBERT E L ET AL.: "Single nucleotide polymorphisms (SNPs) in the estrogen receptor gene and breast cancer susceptibility"</p> <p>JOURNAL OF STEROID BIOCHEMISTRY & MOLECULAR BIOLOGY, vol. 71, November 1999 (1999-11), pages 21-27, XP001010874</p> <p>* see especially Fig.1 *</p> <p>the whole document</p> <p>---</p>	
A	<p>LEMIEUX P AND FUQUA S: "The role of the estrogen receptor in tumor progression"</p> <p>THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM, vol. 56, no. 1-6, 1996, pages 87-91, XP001010876</p> <p>* see especially page 89, column 2, paragraph 1 *</p> <p>the whole document</p> <p>---</p>	
A	<p>WILTSCHKE C ET AL.: "Isolation of a 'super-active' estrogen receptor variant from premalignant breast lesions"</p> <p>BREAST CANCER RESEARCH TREATMENT, vol. 37, no. Sup, 1996, page 40 XP001011239</p> <p>abstract</p> <p>---</p>	
A	<p>LORENTZON M ET AL.: "Estrogen receptor gene polymorphism, but not estradiol levels, is related to bone density in healthy adolescent boys: A cross-sectional and longitudinal study"</p> <p>THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM, vol. 84, no. 12, 1999, pages 4597-4601, XP001011802</p> <p>the whole document</p> <p>---</p>	
	<p>---</p> <p>-/--</p>	

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/05358

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>JAZAERI O ET AL.: "Expression of estrogen receptor alpha mRNA and protein variants in human endometrial carcinoma" GYNECOLOGIC ONCOLOGY, vol. 74, July 1999 (1999-07), pages 38-47, XP001011870 the whole document</p> <p style="text-align: center;">---</p>	
A	<p>GREEN S ET AL.: "Human oestrogen receptor cDNA: sequence, expression and homology to v-erb-A" NATURE, vol. 320, 1986, pages 134-139, XP001009860 cited in the application abstract; figure 2</p> <p style="text-align: center;">-----</p>	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/05358

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 1-16
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
17 (partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1-16

Claims 1-16 refer to peptide variants of an estrogen receptor protein, an antibody selectively binding to such a peptide variant, nucleic acids (or fragments thereof) encoded by such peptide variants, vectors and host cells comprising such encoded nucleic acid sequences, methods for producing or detecting such peptide variants or encoded nucleic acids, kits comprising reagents suitable in such methods, as well as a method for identifying an agent binding to such peptide variants. However, the application does not disclose such peptide variants, neither in Fig.2 (which discloses short nucleic acid fragments of ESR-alpha comprising single nucleotide polymorphisms) nor in Fig. 3 (which discloses the only peptide sequence within the whole application and which represents the wild type sequence of ESR-alpha [first published in 1986]).

Since no variant peptide sequences have been disclosed within the application, a lack of clarity and conciseness within the meaning of Article 6 PCT arises for claims 1-16 rendering a meaningful search for these claims impossible. Consequently, the search has been carried out for those parts of the application which are supported by the description and do appear to be clear and concise, namely claim 17 disclosing SNP gene polymorphisms as shown in Fig.2, as well as patient haplotypes as enlisted in Fig.4.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claim : 17 (partially)

INVENTION 1:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within exon 1A according to Fig.2.

2. Claim : 17 (partially)

INVENTION 2:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within exon 1B according to Fig.2.

3. Claim : 17 (partially)

INVENTION 3:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within intron 1D according to Fig.2.

4. Claim : 17 (partially)

INVENTION 4:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within exon 1C according to Fig.2.

5. Claim : 17 (partially)

INVENTION 5:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within intron 1E according to Fig.2.

6. Claim : 17 (partially)

INVENTION 6:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within exon 1F according to Fig.2.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

7. Claim : 17 (partially)

INVENTION 7:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within exon 1G according to Fig.2.

8. Claim : 17 (partially)

INVENTION 8:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within intron 1G according to Fig.2.

9. Claim : 17 (partially)

INVENTION 9:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within intron 3 according to Fig.2.

10. Claim : 17 (partially)

INVENTION 10:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within exon 3 according to Fig.2.

11. Claim : 17 (partially)

INVENTION 11:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within exon 4 according to Fig.2.

12. Claim : 17 (partially)

INVENTION 12:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within exon 6 according to Fig.2.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

13. Claim : 17 (partially)

INVENTION 13:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within intron 6 according to Fig.2.

14. Claim : 17 (partially)

INVENTION 14:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within intron 8 according to Fig.2.

15. Claim : 17 (partially)

INVENTION 15:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon a single nucleotide polymorphism within exon 8 according to Fig.2.

16. Claim : 17 (partially)

INVENTION 16:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon haplotype #1-6 according to Fig.4a (Liverpool tumors).

17. Claim : 17 (partially)

INVENTION 17 TO INVENTION 117:

A method of identifying an individual having or at risk of developing a disorder mediated by a variant estrogen receptor based upon haplotype #2-7, #3, ..., and #102, according to Fig.4a (Liverpool tumors).

Invention 17 refers to haplotype #2-7,
Invention 18 refers to haplotype #3,

...

Invention 117 refers to haplotype #102.